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PITTSBURGH IMO METERS

Not quite two years ago the Pittsburgh Equitable Meter Company introduced the Pittsburgh IMO Water Meter at the A.W.W.A. Convention at New Orleans, La. It was hailed then as the first practical innovation in water meter design and construction to be offered the American Waterworks trade in over 50 years.
Enthusiastically received, praised, tested, proven—that's been the reaction of waterworks men since that first announcement. To date, IMO meters are in use in over 1200 waterworks systems, a remarkable tribute to a remarkable product.
Behind every industrial success there's a story and the IMO is no exception. Four factors were responsible for the immediate acceptance of IMO meters by waterworks men:
FIRST, THEY MEASURE THE LOW FLOWS that either escape measurement entirely or are only partially recorded by conventional meters. Factory specifications guarantee accuracy of 98% at 1/4 g.p.m.; 90% at 1/12 g.p.m.; the most stringent accuracy test ever applied to new meters.
SECOND, THEIR INITIAL ACCURACY IS SUSTAINED ACCURACY. Numerous tests show that even after several million gallons have been measured, Pittsburgh IMO Meters measure slightly better on the low flows than when first put into service and that their accuracy does not change at rates of flow above 1 g.p.m.
THIRD, THEY OPERATE QUIETLY. The basic construction of the Pittsburgh IMO is responsible for its quiet operation. Smoothly turning rotors, precision cut to mesh perfectly, revolve with a semi-floating action as the water flows through the measuring chamber in a straight line. For this reason the IMO can never become noisy; there can be no clicking sound to annoy your consumers.
FOURTH, THEY COST LESS TO MAINTAIN. The unique design of the measuring chamber and its semi-floating rotors increases the life of the working parts as compared to conventional meters and insures longer trouble-free service.
No other meter has ever been given such wide public acceptance in such a short time. The Pittsburgh IMO qualifies on every count and bears the stamp of approval of hundreds of waterworks men in every section of the country.

PITTSBURGH IMO METERS
WEAR IN WHERE OTHERS WEAR OUT

MAKE YOUR PLANS TO ATTEND THE 60TH ANNUAL MEETING OF THE AMERICAN WATER WORKS ASSOCIATION, KANSAS CITY, MO., THE WEEK OF APRIL 21, 1940.

PITTSBURGH EQUITABLE METER COMPANY
MERCO NORDSTROM VALVE CO.
NEW YORK · BUFFALO · PHILADELPHIA · KANSAS CITY · TULSA · LOS ANGELES · *Main Offices* · PITTSBURGH, PA. · DES MOINES · CHICAGO · COLUMBIA · MEMPHIS · OAKLAND · HOUSTON

Thousands of IMO Meters Are Now in Service—
Over ~~1100~~ 1200 Water Works Systems Have Adopted Them

Name-Calling vs. Constructive Discussion

Theories and 'Isms

IF A congress of dictionary-makers were to try to recast the English language into a logical mold, the effort would hardly end without some attention to suffixes. Thus to get rid of present confusion, words designating the good and the bad in theories and practices might be classified into two groups. There would be the group to be admired and the group to be detested—each being marked clearly by its appropriate final syllable.

Without waiting for the experts to do it, suppose we were to attempt the task on a small scale, selecting *ty* and *cy* as good little suffixes and *ism* as a very bad one. We could make a brave start by listing in the worthy group such terms as democracy, liberty, and honesty; and by placing in the evil category such words as communism, fascism and barbarism. We might envision the day when children would be taught to mind their 'tys and 'cys, and to spurn all 'isms—with the dictionary as a safe guide to conduct.

But we should soon realize that, in our present speech, not all 'tys and 'cys are noble, nor all 'isms ignoble. Consider, for example, such honorable *'isms* as patriotism and Americanism, and such detestable *'cys* and *'tys* as autocracy and brutality and stupidity. If democracy is to be welcomed in good society, must republicanism be banned as an *ism?* If we must look askance at collectivism, must we also scorn capitalism because of its ending?

While the end results likely to follow acceptance of any doctrine, theory, or practice may be the best possible reason for its adoption or rejection, the end letters of its name are obviously no safe guide. Many a theory now highly respectable was condemned as a dangerous *'ism*—or whatever was the current term of disparagement—when first propounded. That does not mean, of course, that every crackpot idea should be embraced until proved worthless; but it does indicate that we ought to evaluate carefully what is happening in the practice of various *'isms* and *'tys* and *'cys* throughout the world.

The fact that dictatorships have made plans is, for example, no reason for rejecting planning as alien to American ideals; but it is an impelling reason for insisting on democratic methods of planning and administration. Nor does even a decade of unemployment and floods and dust bowls in the United States give sound reason for assuming that democracy has failed. What is happening in Europe and Asia has made dictatorships too distasteful for present imitation. But it does show the need for so organizing our political-social-economic system in the United States as to minimize the danger of unrest which might lead some day to dangerous dallying with theories that are not only alien but unwise.

In his "Prologue to Politics," Charles E. Merriam puts it thus:

> Reason must yield to force, some say, in this era of open assertion that might makes right, within the state and without. No, the answer is that reason itself is the greatest force, and in the end it will prevail. The great work of politics is to promote the commonweal as seen by reason and applied by reasonable measures through reasonable men. But reason must be allied with will, with faith, with hope, with practical judgment, and must be set as the jewel in organization and management. It is one of the very greatest tasks of politics, now and always, to bring about the fusion of these factors—their union and their expression—in the richest forms of social and political life.

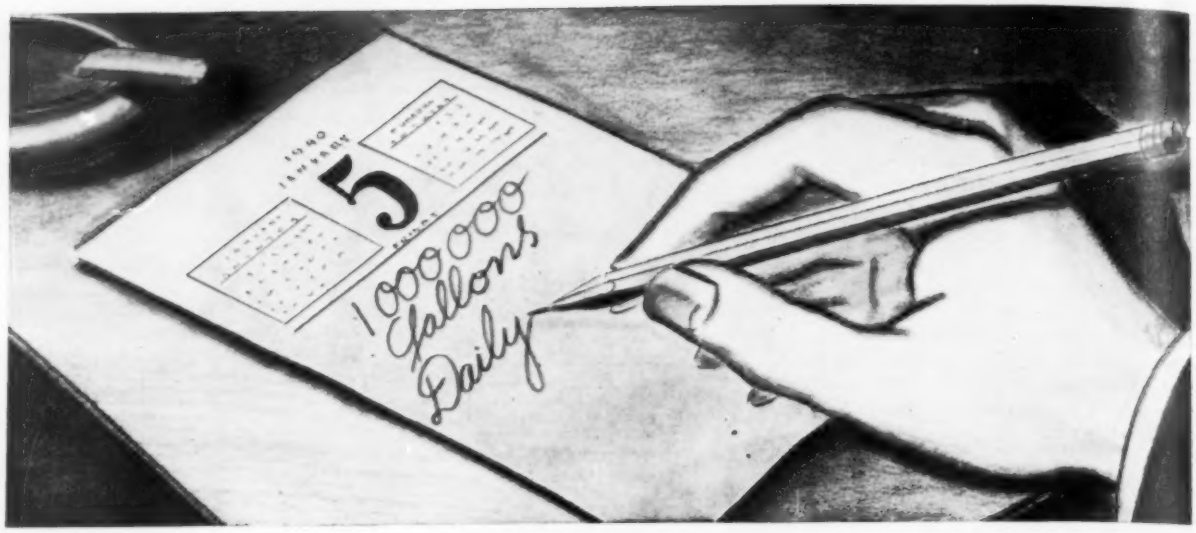
A major advantage of our Federal system of government in the United States is our ability to try out new theories in limited areas, and to let them spread if they prove beneficial. It is this freedom from centralized control that has made possible during the last quarter-century the adoption and spread of the commission-manager form of local government and of the control of land uses through zoning.

Outstanding among more recent experiments, aided but not imposed from Washington, is the search for a wise balance between public and private effort in the improvement of housing and neighborhood conditions. The final answer is not yet clear, but determination to banish urban blight and slums is becoming increasingly vocal.

These and other efforts for the planning, building and administration of finer cities, towns and villages will move forward more rapidly as we learn to replace name-calling with constructive discussion in which all interests and points of view are heard and weighed, and in which theories and 'isms are finally evaluated by their *soundness* rather than by their *sound.*

"REGULATING" THE WATCH.

Cartoon by courtesy of The New York Times



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Whatever your water needs may be, provided geological formation does not prohibit, Layne will adequately fulfill your needs in a contract that pre-specifies the cost per million gallons. Furthermore, based upon past records, a Layne Water System assures you of the most years of service at the lowest upkeep cost.

Any City, Factory, Paper Mill, Oil Industry, Railroad, Irrigation, or other business official, may secure a complete file of bulletins, catalogs and folders on Layne Well Water Systems, without obligation, by addressing,

LAYNE & BOWLER, INC.
Dept. B, Memphis, Tenn.

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LAYNE-ARKANSAS CO. . STUTTGART, ARK.
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LAYNE-BOWLER NEW ENGLAND COMPANY, BOSTON . . . . . MASSACHUSETTS.
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PUMPS & WELL WATER SYSTEMS
FOR MUNICIPALITIES • INDUSTRIES • RAILROADS • MINES AND IRRIGATION

Our Municipal Notebook

Has Your City a Policy?

CITY PLANNING is generally thought of as having to do with the physical development of cities—with forethought in locating and designing improvements that can be shown on a map. Perhaps there is need for a broader term which would cover not only city planning as just defined, but also the application of forethought to other lines of endeavor with which the modern municipal official must concern himself. *Municipal policy* is suggested as such a term.

Cities, like individuals, can succeed much better when guided by wise and far-seeing policies than merely by muddling through recurrent emergencies. The policies of any municipality reflect the ability and the attitude of the local administration. If they are constructive and therefore successful, they have started with a study which developed a firm grasp of each problem. There followed a plan. This plan was digested and subscribed to by the officials who must carry it out. It was then carried out, with vigor and dispatch where possible, with caution and public education where necessary. It was put through because of sincerity of motive, knowledge of the facts, confidence in the rightness of it.

Where such policies are lacking, the evidence may be all too clear in street systems that are poorly planned, badly maintained and under-policed; in utilities that are inadequate; in fire insurance costs that are high and fire equipment that is obsolete; in parks that are mediocre and swimming pools that are non-attracting; in transportation that has run down in the midst of traffic confusion; in accounting and tax-collecting methods that are antiquated and inefficient.

Fortunately, municipalities exist in increasing numbers whose policies are preventing or correcting such disservice to their citizens. One of them is Bridgeport, Conn.—a city with an articulate and vigorous mayor and a particularly acute and energetic staff of city department heads. During the last few years and months, Bridgeport has put into effect a number of penetrating improvements built around a closely held and intelligently directed control of the municipality's finances.

A member of the staff of THE AMERICAN CITY went to Bridgeport, not for the usual editorial purpose of securing data on one particular public improvement or administrative method, but to make a somewhat comprehensive study of the methods by which the officials of that city have been so successful in winning and holding public support. What were the objectives in Bridgeport? To what extent have they been achieved? By what means? With what equipment are the best municipal services of this city being rendered? In several articles THE AMERICAN CITY will endeavor to answer some of these questions usefully. The first, on page 57, describes the work of the Police Department. Do not miss it.

A Suggested Solution for Parking Problems

1. THE FIRST STEP in an effective study to find the solution of the parking problem in a given city is to make an analysis and classification of the parked cars, to determine the number

   (a) parking not more than one hour
   (b) parking not more than two hours
   (c) parking not more than three hours
   (d) parking more than three hours
   (e) owned by business men and employees of the business district

2. Plan to handle classes (a), (b) and (c) at the curb by means of parking meters permitting several periods of short-time parking, and three-hour parking on adjacent streets for those with longer engagements.

3. Having disposed of the problem of short-time parking, unless the actual experience with parking meters shows that the problem has not been disposed of, give remaining consideration to the problem of parking for more than three hours.

4. The first step in this part of the study is to survey the off-street spaces already available and the charges. The breakdown of these long-time parkers has already been determined from the initial count, as follows:

   (a) Cars of people working in the business district
   (b) Cars of visitors to the business district

5. Determine whether or not, or why not, these parkers do not use commercial lots and garages.

6. If it is felt that the charges are too high and that additional off-street space must be provided, work out the actual detailed costs to provide and maintain and operate these rock-bottom facilities. This was done, at least to a degree that furnished an index, by the American Automobile Association in 1939. The basic costs per car space having been developed, it can be decided whether or not these facilities should be charged for or furnished free, and by whom. The city ordinance which establishes the short-time parking periods will automatically exclude long-time parkers from the metered district, so that the off-street space will have to be used where the unmetered space is insufficient.

Indemnity

ONE OF THE LIVEST SUBJECTS at the present time is fire insurance of municipal properties. There is a widespread feeling that the costs are out of proportion to the risk and the actual losses. What are the facts? They are not easy to determine, for insurance is a complex subject involving the tricky laws of chances and probability and averages. Unless rates are based on a very long period of time, they are mere gambling stakes which no reputable company or municipal government would depend on for continuing in business or relying on indemnity—immunity from loss.

The very nature of fire insurance precludes cut prices by companies or through various theories of self-insurance by any but the very large cities owning many separate properties. The big companies make much money, but occasionally they are nicked for terrific losses Even the strongest companies reinsure or subdivide risks to spread them in the event of disaster. For losses must be paid. The rock on which first-class fire insurance is built is indemnity—security for the reimbursement of any loss.

But may not the rates be too high? Should not exceptions be made in the case of municipally owned property? Should there not be a distinction between "safe cities" and cities with less favorable fire records? THE AMERICAN CITY will endeavor to answer these questions usefully in a forthcoming issue. Any municipal official desiring to make certain that he sees this study need but say the word and he will be notified in advance of publication of "An Understanding of Fire Insurance of Municipal Properties."

Glendale, Calif., Steam-Electric Power Station with Space for Hydrogen-Cooled Turbine Outdoors

PROBLEM

Filter Plant Needed. Make Recommendations.

DESIRED FEATURES:

1. Steel construction to prevent seepage or cracking.
2. Plant to occupy small ground space per unit of capacity.
3. Should be able to add additional capacity easily and economically.
4. Modern, flexible operation. Rapid sand type filter beds. Filters and basins to operate independent of each other.
5. Low operating cost and economical in first cost.

The Modern Solution to Municipal and Industrial Water Filtration Problems

SOLUTION

Use the Morse Filter Plant.

Analysis of its qualifications shows that it checks with all of the points listed above.

1. ✓
2. ✓
3. ✓
4. ✓
5. ✓

The MORSE FILTER PLANT

WATERWORKS engineers are finding that the Morse Filter Plant readily meets their specifications for modern, efficient and economical water filtration requirements. The Morse unit pictured above is located at Shillington, Penna., where it serves approximately 2,000 industrial, commercial and domestic consumers in four communities. It has a capacity of 864,000 g.p.d. and is used primarily to correct algae, taste and odors, color and turbidity conditions present in the water supply. An adjacent clear water reservoir of steel construction is used, which has a capacity of 300,000-gals. The plant operates approximately 10 hours to supply the daily requirements of the system. Write our nearest office.

CHICAGO BRIDGE & IRON COMPANY

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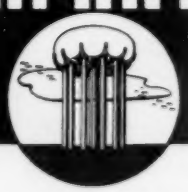
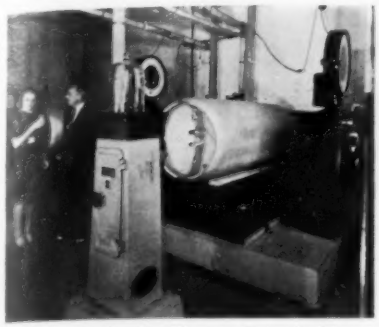
New York	3308-165 Broadway Bldg.	Boston	1501 Consolidated Gas Bldg.	Houston	2919 Main Street
Cleveland	2236 Rockefeller Bldg.	Birmingham	1502 N. Fiftieth Street	Tulsa	1625 Hunt Bldg.
Detroit	1501 Lafayette Bldg.	Dallas	1406 Liberty Bank Bldg.	Los Angeles	1403 Wm. Fox Bldg.



Plants at BIRMINGHAM, CHICAGO, and GREENVILLE, PA.
In Canada: HORTON STEEL WORKS, LIMITED, FORT ERIE, ONTARIO

Service Pipe and Water Bills



Toledo Scales in Use at Detroit Water-Works Plant, for Measuring Chlorine

Special Scales Record Chlorine Weight Used

AN INTERESTING PAIR of rigidly tested Toledo scales have been installed at the Detroit Water Works, Detroit, Mich., to measure the amount of chlorine applied to the domestic water supply. Every contingency involved in the measuring aspect of chlorination has been taken care of. The chlorine tanks are placed on the scale, on a special stand, and beneath the tank is a pan which catches and carries away any condensation that drips off the tank.

Because the operation of applying chlorine is essentially one of removing weight from the cylinder, the scale mechanism is adjusted so that the indicator moves in a counter-clockwise motion instead of clockwise. This feature is of value because if there is any friction or errors, the backward weigh reveals them.

Each scale is equipped with an electric clock and a Printweigh attachment. This equipment provides a printed record of the amount of chlorine removed from the tank every hour. The weighing device is unusually sensitive, because only from 4 to 12 pounds of chlorine are used in an hour's time, a matter of 1 to 3 ounces per minute. In addition, it is possible to check the quantity of chlorine used during any period of the hourly interval by merely pressing a button.

A Method of Curing the Habitual Delinquent

IN THE OCTOBER, 1939, ISSUE of THE AMERICAN CITY we published an item from Williston Park, N. Y., showing the sales talk which is printed on the back of each semi-annual water bill. Robert Kent, Village Clerk, who is responsible for this, has sent us further information on the way the habitual delinquent is handled. On the face of the bill is a statement that water will be shut off if the bill is not paid in 30 days. This is a very unpleasant duty for any water official to carry out, but it is the most effective way to cure the habitual delinquent. In Williston Park they have avoided such action as much as possible. In the past they have sent out follow-up notices, using a memorandum bill and writing or stamping additional notations thereon.

At present they are using two regular printed forms, shown below, for follow-up purposes, and these have been very effective. The past-due notice was sent out on the July bills, and 97 per cent of the accounts were paid within four months. The shut-off notices had not been sent out four months after the July bills because there were a large number of mortgages on property undergoing adjustment. It is felt that after these adjustments have been made, the Water Department can proceed to enforce payment of the remaining items.

Mr. Kent reports that water accounts are in better shape today than they have been in the history of Williston Park, and they expect to collect 100 per cent, or very close to that, before the January bills are mailed. To effect 100 per cent collection, a Water Department must keep an efficient set of records, have a systematic follow-up, enforce regulations, play no favorites, and give fair consideration to reasonable requests.

VILLAGE OF WILLISTON PARK
NASSAU COUNTY, N. Y.
MEMORANDUM WATER BILL
JANUARY 1939 TO JULY 1939
TO BE RETURNED WITH REMITTANCE
Water Rents computed on a semi annual basis Jan. 1st and July 1st

All water rents shall be paid at the Village Office by mail or in person. Make checks payable to Village of Williston Park and not to individuals. If bills are not paid within thirty (30) days the water will be shut off from the premises and will not be turned on again until the payment of the rent and an additional sum of Two Dollars to cover labor of turning water off and on.
CONSUMER GUARANTEES CORRECTNESS OF HIS BILL BY PAYING IT

NAME OF OWNER OR OCCUPANT	BLOCK AND LOT	PERIOD	METER READING	AMOUNT
		July, 1939		
		January, 1939		
		Consumption	Gals.	
		@ 15¢ per 1,000		
		Minimum charge $4.50 per half year		

Save your time and pay Water Rents by mail. This method is easiest and quickest. Use check or money order. Make same payable to the Village of Williston Park and not to individuals.

Hours for Payments
Weekdays—
9 A. M. - 12 noon
1 P. M. - 4 P. M.
Saturdays—
9 A. M. - 11 A. M.

Water rents shall be a lien on the real property on which the water is used and such a lien is prior and superior to every other lien or claim, except the lien of an existing tax. The Village may bring and maintain an action for the foreclosure of such liens for such water rents.

VILLAGE OF WILLISTON PARK
NASSAU COUNTY, N. Y.
WATER CHARGE
PAST DUE
PLEASE REMIT PROMPTLY

All water rents shall be paid at the Village Office by mail or in person. Make checks payable to Village of Williston Park and not to individuals. If bills are not paid within thirty (30) days the water will be shut off from the premises and will not be turned on again until the payment of the rent and an additional sum of Two Dollars to cover labor of turning water off and on.
CONSUMER GUARANTEES CORRECTNESS OF HIS BILL BY PAYING IT

NAME OF OWNER OR OCCUPANT — BLOCK AND LOT

Date of Charge

YOU ARE NOW SUBJECT TO HAVING WATER SHUT OFF WITHOUT NOTICE

Save your time and pay Water Rents by mail. This method is easiest and quickest. Use check or money order. Make same payable to the Village of Williston Park and not to individuals.

Hours for Payments
Weekdays—
9 A. M. - 12 noon
1 P. M. - 4 P. M.
Saturdays—
9 A. M. - 11 A. M.

Water rents shall be a lien on the real property on which the water is used and such a lien is prior and superior to every other lien or claim, except the lien of an existing tax. The Village may bring and maintain an action for the foreclosure of such liens for such water rents.

VILLAGE OF WILLISTON PARK
NASSAU COUNTY, N. Y.
DELINQUENT WATER
FINAL NOTICE

All water rents shall be paid at the Village Office by mail or in person. Make checks payable to Village of Williston Park and not to individuals. If bills are not paid within thirty (30) days the water will be shut off from the premises and will not be turned on again until the payment of the rent and an additional sum of Two Dollars to cover labor of turning water off and on.
CONSUMER GUARANTEES CORRECTNESS OF HIS BILL BY PAYING IT

NAME OF OWNER OR OCCUPANT — BLOCK AND LOT

Date of Charge

SERVICE WILL BE SHUT OFF IF NOT PAID ON OR BEFORE

Save your time and pay Water Rents by mail. This method is easiest and quickest. Use check or money order. Make same payable to the Village of Williston Park and not to individuals.

Hours for Payments
Weekdays—
9 A. M. - 12 noon
1 P. M. - 4 P. M.
Saturdays—
9 A. M. - 11 A. M.

Water rents shall be a lien on the real property on which the water is used and such a lien is prior and superior to every other lien or claim, except the lien of an existing tax. The Village may bring and maintain an action for the foreclosure of such liens for such water rents.

The Original Bill, and, Below, the "Past Due" and "Final Notice" Bills Now Being Used Effectively in Williston Park, N. Y.

Remember this about

LEAKAGE

When rash statements are made about large losses from main leakage which are contrary to your experience, *cite the facts.* Leakage is only a part of unaccounted-for water. The generally accepted average of unaccounted-for water, throughout the nation, is about 15%. And that includes water used by the fire and sewer departments; water used for street flushing, for public buildings and other similar services. How much is due to leakage from cast iron mains? Read what follows:

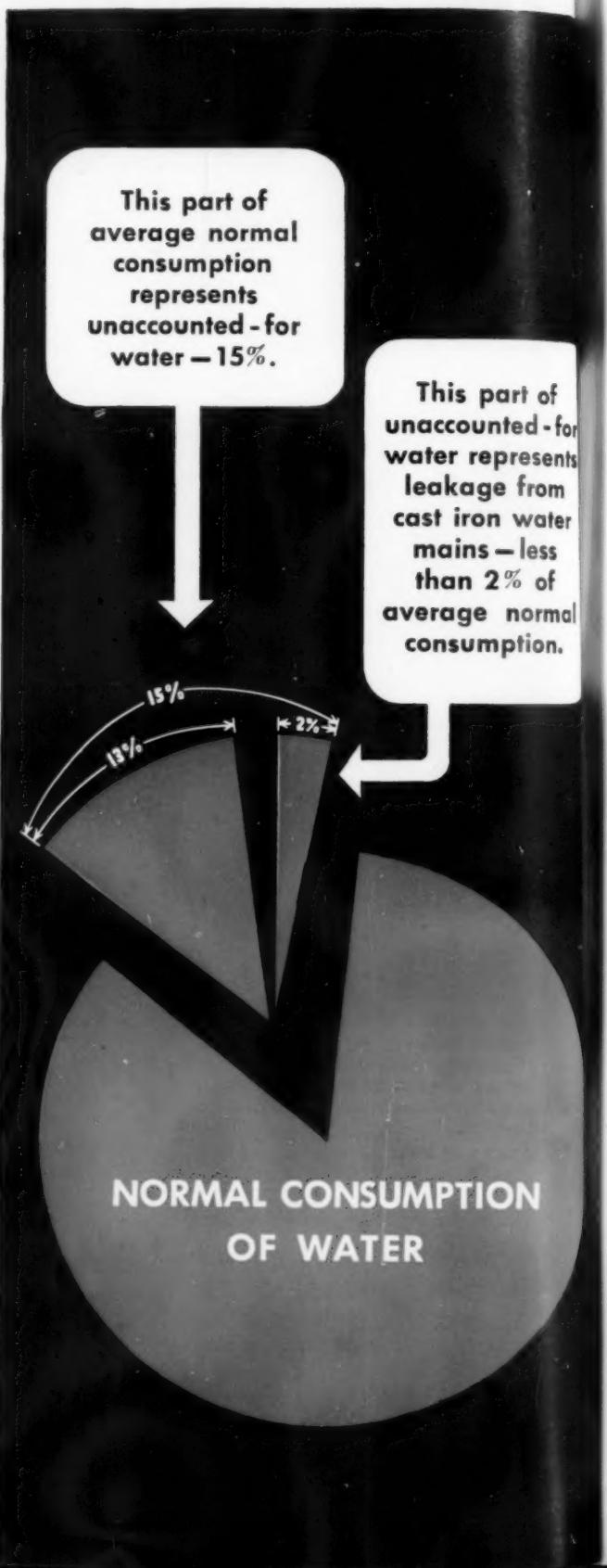
* * * *

To ascertain how much of the 15% average of unaccounted-for water is actually due to leakage from water mains, we have recently conducted a leakage test survey of cast iron mains in 25 cities in various states. The mains tested range from several hundred feet to more than twenty miles in length, in sizes from 4″ to 30″ and up to 44 years old, either with no service connections or relatively few that were turned off during the tests. The average leakage per mile of pipe, per inch of diameter, per 24 hours was 41 gallons—or an average of 380 gallons per mile of pipe per day for the sizes tested. This leakage is less than 2% of the average of normal consumption per mile of distribution main per day. This survey, covering a broad average of water main construction and substituting facts for guesswork, shows that

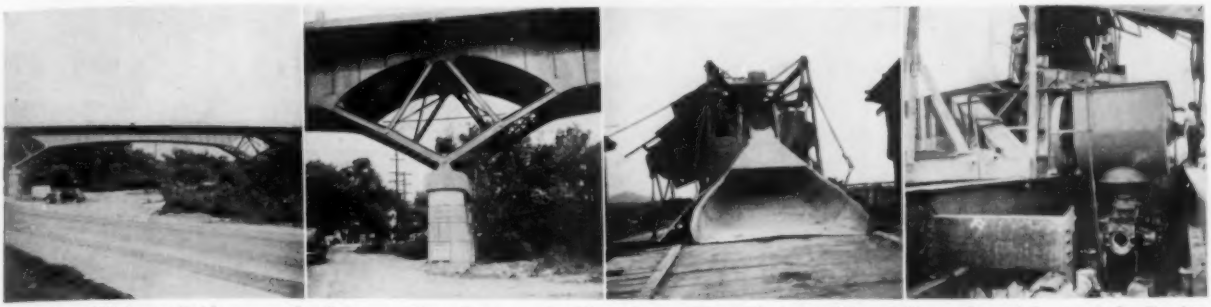
less than one-tenth of all unaccounted-for water is due to leakage from cast iron water mains

THE CAST IRON PIPE RESEARCH ASSOCIATION
Thomas F. Wolfe, Research Engineer, 1015 Peoples Gas Bldg., Chicago, Illinois.

Look for the "Q-Check" registered trade mark. Cast iron pipe is made in diameters from 1¼ to 84 inches.


This part of average normal consumption represents unaccounted-for water—15%.
This part of unaccounted-for water represents leakage from cast iron water mains—less than 2% of average normal consumption.
15%
13%
2%
NORMAL CONSUMPTION OF WATER

New Streets and Bridges



The New Highway Bridge over the Potomac River Between the Virginia and West Virginia Cities of Hancock, and Some of the Equipment Used, a Koehring Paver and a Rex Concrete Unit

New Type Bridge Over the Potomac

A QUICKER ROUTE between Winchester, Va., and Pittsburgh, Pa., will be provided by a new concrete-and-steel highway bridge between Hancock, W. Va., and Hancock, Md., crossing the Potomac River and the tracks of the Western Maryland and the Baltimore & Ohio railroads. The structure is 3,157 feet long, with a 24-foot roadway and two 3-foot sidewalks, and is 90 feet high over the river.

The most interesting design feature of the bridge is the patented truss construction of E. M. Wichert, shown in the accompanying illustrations. This truss forms a four-sided figure over every intermediate support and, proportioning this figure to a particular bridge outline, distributes the stresses to effect savings in the amount of steel required. The steel was fabricated by the Bethlehem Steel Co.

The 9,000 cubic yards of concrete for the substructure was placed by a Koehring paving mixer discharging into a Rex Pumpcrete machine which delivered the concrete to hoppers on top of the plywood-lined forms, thence by elephant-trunk chute to the various sections of the forms.

George F. Hazlewood, Cumberland, Md., is contractor. Design and construction were under the supervision of W. C. Hopkins, Bridge Engineer of the Maryland State Roads Commission, Nathan L. Smith, Chief Engineer. The Wichert Continuous Bridge Corporation, Pittsburgh, Pa., owns the truss patents.

Rubber Paving Blocks Serve 16 Years

ON JANUARY 2, 1924, an experimental 10 x 12-foot section of rubber-block paving was laid on East Market Street, Akron, Ohio, directly in front of the trucking entrance to the main gateway of the Goodyear Tire & Rubber Co., where hundreds of trucks pass over the section every week. These rubber blocks or bricks, each 8 inches long, 4 inches wide and 4 inches high, were molded and compounded to resist abrasion and aging, and have tongue-and-groove construction in their sides to give inherent strength when fitted together in laying. The bricks were laid on an 8-inch concrete base with a ¼-inch cushion of high-melting-point asphalt between the rubber and the concrete. One end and one side of each brick were painted with an asphalt emulsion.

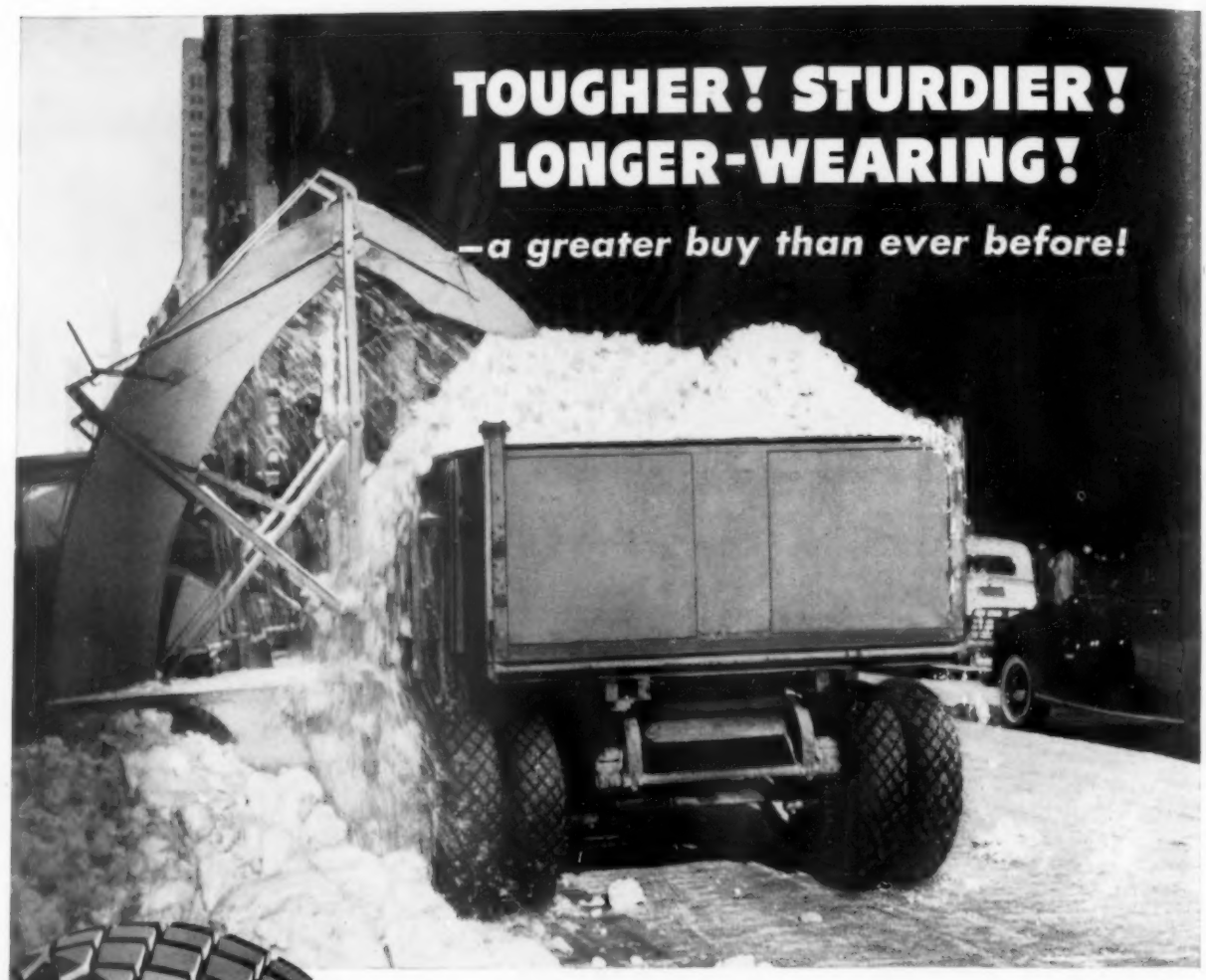
In order to match the long-wearing tread surfaces of tires which in these ensuing 16 years were to travel over it, ¾-inch of the wearing surface of the blocks was made of tough tread stock similar to that used in the construction of Goodyear tires.

Measuring the Wear on Rubber Paving Blocks Which Have Carried Heavy Traffic for 16 Years

A recent careful examination by Goodyear engineers shows that these rubber blocks, despite the heavy traffic which has gone over them, have experienced but slight wear.

Road Mix with Hot Oil

A No. 12 Motor Grader Mixing Hot Oil on Street Reconstruction in Huntington Beach, California



NOW you'll get even greater service from the famous Goodyear All-Weather—for years the world's most popular truck tire. Two new engineering improvements make the 1940 All-Weather the finest tire that ever bore this name!

It gives you greater immunity from tread separation troubles—due to a new method of building rubber into tires, called "multiple compounding," that insures a tougher, stronger bond between tread and body.

It gives you greater resistance to heat troubles, greater endurance—due to the use of new low stretch Supertwist cord in every ply—a stronger, more compactly twisted cord that gives greater resistance to bruises and blowouts with less heat-generating bulk. *It runs cooler!*

What this adds up to is a more compact tire—a tougher tire that excels even former long-wearing All-Weathers in trouble-free mileage.

Yet its price is the biggest surprise of all. See this new 1940 All-Weather at your Goodyear dealer's and you'll find that Goodyear tires are as good as you think, but cost far less than you imagine!

All-Weather, Supertwist—T. M.'s The Goodyear Tire & Rubber Company

THE GREATEST NAME IN RUBBER

GOODYEAR

MORE TONS ARE HAULED ON GOODYEAR TRUCK TIRES THAN ON ANY OTHER KIND

Why not remember to mention THE AMERICAN CITY?

Refuse Collection and Disposal

Garbage Collection and Disposal in London, Ont.

GARBAGE COLLECTION AND DISPOSAL was begun in London, Ont., in 1913, and the city incinerator was erected at a cost of $48,704.55. This has been increased with additions, so that the cost to date is $69,385.83. In 1937 the alterations to the incinerator building and furnace to allow for the burning of all garbage cost $20,681.28.

Garbage collection until October, 1914, was by contract. From that date, when the contractor's equipment was purchased, the system has been operated as a municipal enterprise. Garbage collection now covers every residence within the city limits, and during 1937 the Garbage Department was completely motorized.

The following table shows the various costs entering into garbage collection and disposal for the past three years:

	1936	1937	1938
Plant labor	$8,180.44	$20,295.52	$21,653.12
Stable labor	3,176.86	501.37	.....
Collection labor	46,793.92	51,578.08	56,426.81
Office salaries	1,958.03	1,689.92	.....
Plant expenses	358.13	1,338.58	832.65
Stable expenses	669.83	228.76	.....
Horse feed	1,842.97	174.26	.....
Horse expense	725.02	84.37	.....
Collection expense	2,407.85	8,358.51	7,155.54
Office expense	30.67	.....	.....
Auto expense	24.74	41.86	.....
Plant maintenance	279.54	257.92	501.02
Stable maintenance	21.64	7.25	.....
Collection maintenance	1,891.39	431.12	729.25
Horse maintenance	*2,002.18	158.58	.....
Harness maintenance	134.98	13.88	.....
Auto maintenance	100.23	131.98	12.32
Int. on advances	1,217.05	1,336.08	1,454.98
Garbage sale credit	.....	*3,163.08	.....
	$67,811.11	$83,464.96	$88,765.69
Cost per capita	89 cents	$1.09	$1.16

*Credit.

In 1936, 63 per cent of the garbage collected was incinerated; in 1937 it was 95 per cent; and in 1938, 100%.

Operation of a Dump by City of Newark, N. J.

THE CITY OF NEWARK, N. J., collects an average of 4,000 cubic yards of garbage and refuse per day, which is hauled 21½ miles from the center of the city to a dump on the Newark meadows adjacent to the Newark Airport. This dump, which was formerly disagreeable because of fires and smoke, is now carefully controlled. It contains ashes, garbage, rubbish and trash, but no automobiles. It is completely laid out with 6-inch water lines and hydrants, spaced 300 feet apart, and penetration macadam roads make it possible to reach any part of the dump quickly with fire apparatus if necessary. Watchmen are on duty 24 hours a day; and if a fire starts, a hose line is put into service immediately. If this does not control the fire quickly, a fire company is called.

The material is placed on the dump in layers 6 to 8 feet deep, which are compacted by the traffic of the hauling trucks to 3 to 4 feet. The dump is maintained trim by two tractors and bulldozers.

Between 30 and 40 acres of the Newark city dump has already been landscaped, having been brought up to a final grade, and several baseball fields have been constructed on it by WPA projects sponsored by the Bureau. John S. Flockhart, Principal Assistant Engineer, is associated in the operation of refuse collection, disposal and street cleaning with the Chief Engineer, James W. Costello, and his deputy, Goline Doremus.

Dustless Operation of Ash Transfer Dump

THE DEPARTMENT OF SANITATION, New York City, has developed a scheme for the elimination of dust when dumping refuse and ashes from its collection trucks into barges at the new 92nd Street dump station. The scheme employs air under low pressure, and water under high pressure, to form draughts and curtains respectively.

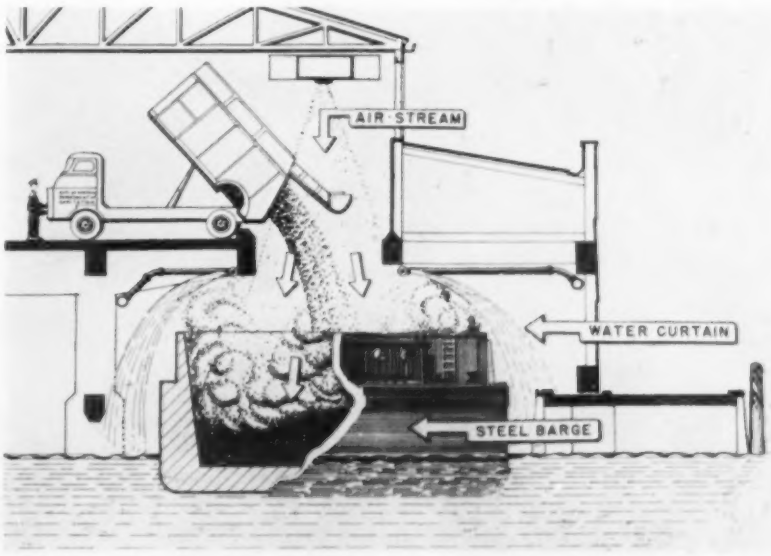
Air at ½-inch static pressure is used to force light dust particles back toward the barge, where they will come in contact with a fine water spray curtain delivered at 75 pounds pressure per square inch, and will be disposed of in the river.

A fan with a capacity of 97,000 cubic feet per minute, and driven by a 30-hp motor, will deliver air through a 130-foot duct. Two such ducts are being installed, because this particular transfer station is designed to accommodate two barges. Grilles on the underside of each duct measuring 18 x 8 inches on 24-inch centers will provide outlets for 1,500 cubic feet per minute of air each. The grilles have adjustable bars in both directions, and a variable volume damper control behind each. Each grille will probably aspirate an additional 1,500 cubic feet per minute, thereby giving an effective total of 3,000 cubic feet per minute of air for each 2 feet of length of floor opening.

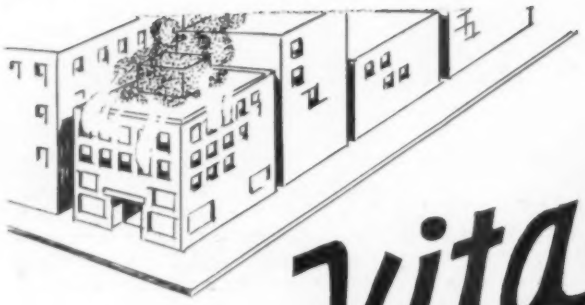
The water for the spray-heads for the water curtains is obtained from the river. A double-suction, single-stage, horizontally split casing, all bronze centrifugal pump will pick up 1,700 gallons of salt water per minute and deliver it at 75 pounds pressure. The pump is driven by an 100-hp electric motor with a reduced voltage starter. The spray-heads are so installed as to enclose the barge on four sides.

This method of dust handling is the result of studies and conferences between engineers of the office of the Borough President of Manhattan and of the Department of Sanitation, and is the original idea of one of the engineers of the Borough President's office. It is the first system of its kind and is being used in the first fully enclosed dump station in New York City.

JOSEPH C. ZENGERLE,
Chief Engineer, Department of Sanitation.



Scheme of Operation of the New 92nd Street Transfer Dump, New York City, to Eliminate Dust During Dumping



the Vital Gap

between the inception of fire and the arrival of apparatus can be bridged by installing more and conspicuously located fire alarm boxes . . . . . .

Three Fold Fire Alarm Box on Type U1000-6 Pedestal

Every fire chief realizes that an inconspicuously located box can mean a *delayed alarm* . . . precious seconds lost that might well result in a conflagration.

Fire losses can be lowered . . . and they have been in many communities where the advices of Gamewell engineers were carefully considered and accepted.

Gamewell surveys indicate that a "box a block" in congested, high value districts are none too many. Then in residential sections a box every 500 feet and where localities are sparsely settled, a box at every group of buildings provides ideal protection.

Make the Three-Fold Fire Alarm System your city's "first line of defense against Fire!"

Check up on the fire alarm box situation in your town, then ask the cooperation of Gamewell engineers.

THE GAMEWELL COMPANY

NEWTON UPPER FALLS MASSACHUSETTS

Public Safety

Trained Firemen with Modern Tools

FOR MANY YEARS the fire losses of America showed a constant upward trend, although fire-protection equipment and personnel were both improving. During the last five years, however, losses have shrunk in practically every city in the United States. Nevertheless, considerably more remains to be done.

Apparatus built in early years obviously could not include refinements now considered essential. In addition to the traditional pumpers, ladder trucks, and hose wagons, there is even more need for many special pieces of equipment such as salvage wagons, lighting trucks, rescue wagons and various combinations of these. The duties of the fire department now include practically all work involving the protection of life and property from fire. Salvage work has steadily increased in importance, and hundreds of fire departments have purchased the necessary equipment and trained the men to protect property against damage by water used in extinguishing fires. Fire chiefs have become more conscious of their duty to *prevent* fires, and the organization of fire-prevention bureaus has gone forward at a commendable rate.

No one knows better than the fire chief the hazards of open stairways, shafts and elevators, the impossibility of fighting fires in buildings of excessive areas, the consequent life hazard of these and of the great heights of many buildings. Usually no action is taken to improve structural conditions until there is a disastrous fire. Adequate knowledge of these hazards is part of the training of a fireman. One of the duties which the International Association of Fire Chiefs must assume soon is the education of the public as to the danger lurking in these faulty structural features. As part of this work, the public must be taught the protective value of automatic sprinkler systems, automatic alarm systems, and the many and varied types of extinguishing devices vital in places of special hazard. In recent years industry has increased its use of chemicals of all kinds, with resulting hazards of both explosion and fire.

R. E. MOTTESHEARD,
Chief, Department of Fire Protection,
Dearborn, Mich.

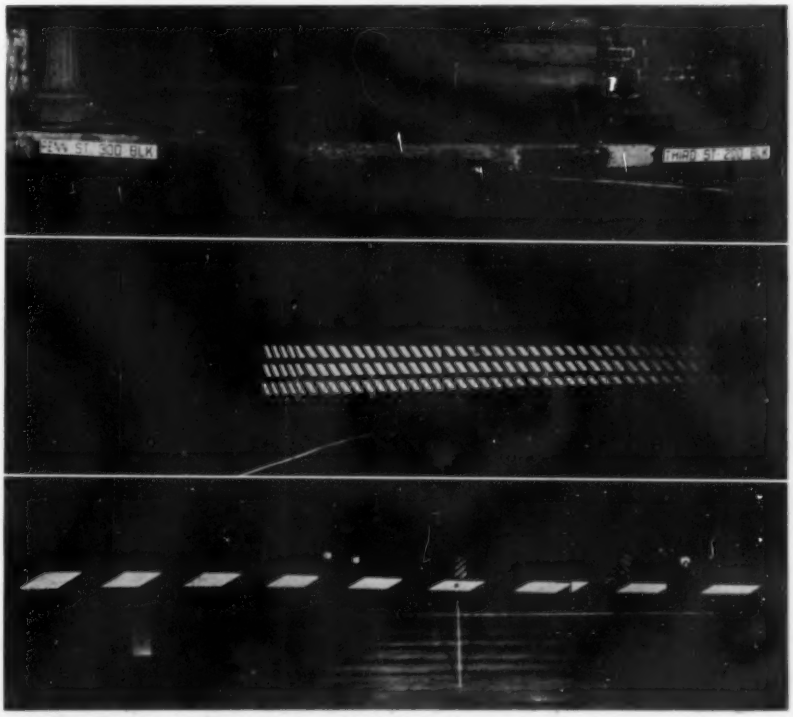
See page 77

COURTESY OF TRIPPE MANUFACTURING CO., 600 W. JACKSON BOULEVARD, CHICAGO

Taking a Picture for the Judge

HERE is graphic proof of the kind of evidence furnished by the Trippe Traffik-I, a camera-speedometer combination which gets the miles per hour into the picture of the speeding car—in focus. The camera can be used for other photographs, and can be dismounted from the "speeding position" inside the police car to the right of the driver's head.

LORENZ SCHEY,
Chief of Police, Lincolnwood, Ill.



COURTESY OF PRISMO SAFETY CORPORATION, HUNTINGDON, PA.

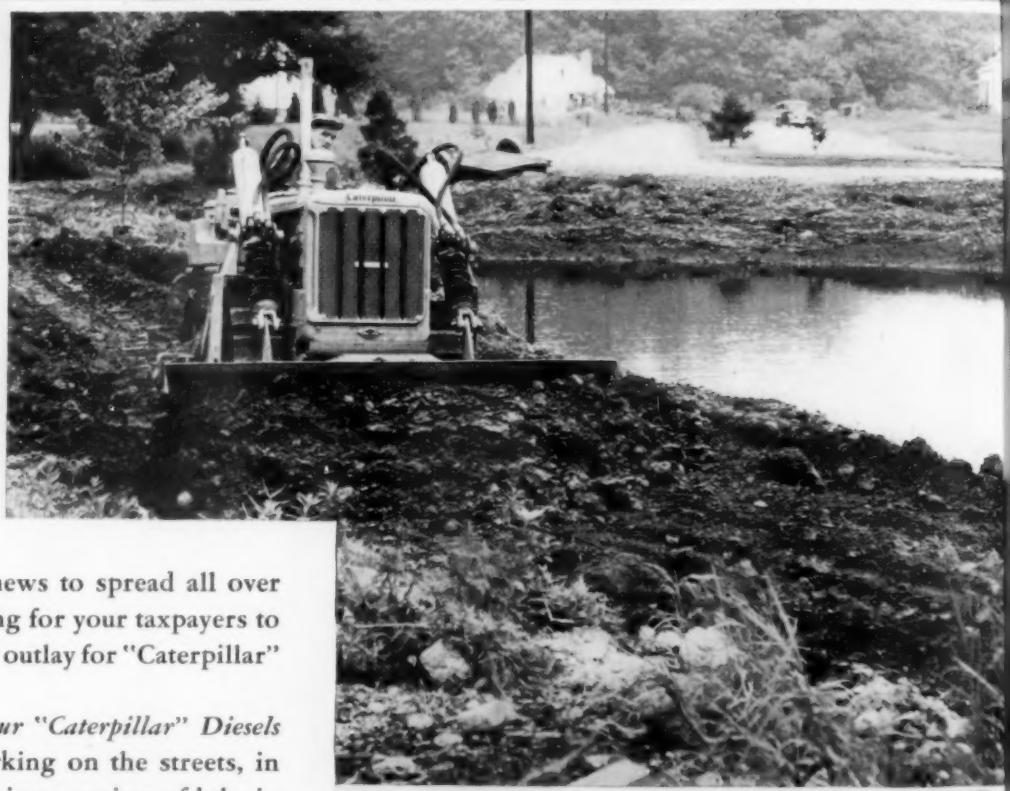
These three night photographs show clear curb marking, at top; an obstruction fence (middle); and a railway crossing gate. Increasing attention is given to making traffic hazards and traffic aids visible by night as well as in the daytime

It's All Over Town!

Southern Pines, North Carolina, uses only 50c worth of fuel a day (less than a gallon an hour, at 7c a gallon) in the operation of this "Caterpillar" Diesel D2 Tractor and "Caterpillar" hand-controlled Grader. Former power for the same work cost $2.50 a day!

The smallest "Caterpillar" Diesel Motor Grader—the No. 212, designed and built with city work in mind. Often called "a street department in itself," this machine can practically handle your year-round maintenance and building program! (Upper right-hand photo.)

The smallest "Caterpillar" Diesel Tractor—the 25-drawbar-horsepower D2. Equipped with a roll-over scraper, this machine did the excavating for the construction of an artificial pond at Norwalk, Connecticut. It is shown leveling and finishing off the job with a LaPlant-Choate Roadbuilder.



IT DOESN'T take long for news to spread all over town . . . and it won't take long for your taxpayers to catch on to the wisdom of your outlay for "Caterpillar" Diesel Equipment!

Because, for one thing, *your "Caterpillar" Diesels will be all over town too*—working on the streets, in the parks, at the city dump, doing a variety of jobs in many departments, all year round!

Taxpayers will see projects started and quickly completed . . . admire the ruggedness and efficiency of these machines at work . . . hear how remarkably little fuel they use, and how *little* it costs. And that's when praise will pour in from all over town!

See your nearest "Caterpillar" dealer for further information . . . or write direct to the factory for the *free,* valuable folder entitled "It's All Over Town!"

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

CATERPILLAR

REG. U.S. PAT. OFF.

DIESEL ENGINES • TRACK-TYPE TRACTORS

ROAD MACHINERY

Vol. LV, No. 3 The American City MARCH, 1940

Full Value vs. Market Value in Real Estate Assessments

ASSESSING officers and others concerned with the valuation of real estate for taxation will find much of interest in a letter written on January 25 by President William Stanley Miller of the Tax Commission of the City of New York to Mayor Fiorello H. LaGuardia.* The occasion for the letter was a protest by a property owner whose assessment had been reduced in 1938 by court order from $160,000 to $129,000 and restored by the city to the higher figure for the tax year 1939-40. This was interpreted by the complainant as an unjustifiable disregard of the opinion of the Court.

The letter cites court decisions showing that, in fixing current assessments, the Tax Department is "not required to follow judicial decisions of values fixed for prior years." Quoting Section 8 of the amended constitution of the state of New York, which provides that assessments of real property shall in no case exceed "full value," President Miller says:

I respectfully point out that it was not intended that assessed valuations be fixed by our assessors at *market prices* which are the result of distress conditions, and if *extraordinary* circumstances do not exist at the present time, then my experience for forty years has been for naught. With former gilt-edge stocks and bonds dragging the bottom of the market, with thousands of heretofore strong concerns laboring under 77B of the Bankruptcy Act, with thousands of real estate foreclosures brought during the past few years, with ten million people unemployed or on relief, and with the nations of the world at each other's throats, any man who would have the courage and hardihood to say that *ordinary* conditions now exist, would be open to a charge of mental instability. . . .

* The full text of the letter is available for readers of THE AMERICAN CITY in pamphlet form on application to the Tax Commission, Municipal Building, New York.

Legislative Recognition of Serious Public Emergency

Nor is it a logical answer to assert that the present depression has lasted for so long a period that present conditions are normal. The complete answer to this claim is that legislation was enacted in this state under Chapter 793 of the Laws of 1933, part of which is as follows:

"Section 1: It is hereby declared that a serious public emergency, affecting and threatening the welfare, comfort and safety of the people of the state and resulting from the abnormal disruption in economic and financial processes, the abnormal credit and currency situation in the state and nation, the abnormal deflation of real property values and the curtailment of incomes by unemployment and other adverse conditions, exists. Therefore, in the public interest, the necessity for legislative intervention by the enactment of the provisions hereinafter prescribed, and their application until July 1, 1934, is hereby declared as a matter of legislative determination."

This law prohibited, under certain conditions, the foreclosure of mortgages and actions on bonds secured by mortgages. This state legislative recognition of the existence of an emergency has continued from year to year *until the present time*. Bills to continue such moratorium are now before the Legislature for consideration and such moratorium will probably be continued, upon the continued recognition that the emergency still exists.

Excerpts from Judicial Opinions

For years we looked in vain for some legal yardstick by which to measure assessed valuations, but last year it came to us in the form of a decision handed down by the Court of Appeals in the *Matter of Empt* (277 N. Y. 452). The Court, in determining fair market value in condemnation proceedings, said: "*Fair market value* means neither panic value, auction value, speculative value, nor a value fixed by depressed or inflated prices."

In the case of *Heiman v. Bishop*, 272 N. Y. 83, the Court of Appeals held as follows:

"Prior to the depression the method of determining the 'market value' of real property was fairly well established by the decisions of the courts. In a general way, the market value of real property is the amount which one desiring but not compelled to purchase will pay under ordinary conditions, to a seller who desires but it not compelled to sell."

In the Empt case, the Court of Appeals referred to the case of *Heiman v. Bishop*, and said:

"It is further observed in that case 'that in the various definitions of market value of real property stated by the courts there appear the words "under ordinary conditions" or "under ordinary circumstances" or words of like import. Certainly, during the depression, ordinary conditions have not existed in the real property market. Conditions in that market have been *extraordinary* and *unprecedented*.'"

We assume that when the realty interests use the term *market value* they mean *market price*, so that any reference in this letter to *market value* is made with that understanding. . . .

Depressed vs. Normal Values

We have over 820,000 parcels of real property in the city of New York, and most of them are not in the market at all, and consequently their value cannot be measured solely by *market value* as distinguished from *full value*.

The savings banks and other financial institutions are loaded down with approximately 80,000 parcels of real property, title to which was derived mainly through foreclosure proceedings or deeds in lieu of foreclosure. They constitute an actual distress market and every other parcel of property in the market at this time is definitely tainted with these distress conditions, and conveyances from these owners still continue to depress real estate values. Sales by executors or trustees should not be regarded as reflecting fair market value, as in most instances they are controlled by forced or distress conditions. . . .

According to all the decisions available, it never was intended that the tax structure of any great city should be predicated upon the ebb and flow of a distressed real estate market. The main requisite of any tax structure is stability, because there must necessarily be a stable revenue to be derived from real property in order to meet the bills of the municipality. We did not

institute this rule. It has been in existence for generations, but any reference to the established rule by any city tax official here is immediately accepted by real estate interests as an admission that we are governed entirely by budgetary requirements in the making of valuations, irrespective of full value. In the opinion of the more vocal real estate men *market value* seems to constitute the lowest possible value that can be derived under any conditions, but this theory does not square with the law or the authorities. . . .

While the provision in the New York City Charter specifies value under ordinary circumstances, the difficulty in ascertaining what *ordinary circumstances* are, adds to the uncertainty of exactly what the law requires, and actual practice cannot be said to accept present market prices as the sole basis of appraisal. Most assessors throughout the country maintain that they attempt to place on the properties estimates which are approximates of a long-time trend of market values. In this sense they recognize the distinction between full value and market price.

The real estate interests do not seem to comprehend how values are created. The valuation of real property has not yet been developed into an exact science, and probably never will be. Value in the final analysis is a matter of opinion. Every parcel of land has a background of value, and following the peculiarities of human nature, the very men who create value for one purpose are the most bitter critics of these same values when their own interests are affected along other lines.

Three Types of Appraisals

In our work in this Department, we definitely recognize that the appraisers, generally members of the real estate boards, have adopted three types of valuations, and that the identical appraisers often swear to three different types of value for three different purposes. These values as generally recognized fall into the following categories:

1. An appraisal for mortgage purposes
2. An appraisal for condemnation proceedings
3. An appraisal for tax purposes

For mortgage and condemnation purposes, the advantages of location, the magnificent type of structure, transit facilities, and rental possibilities are all recommended by the appraisers in superlatives without any qualification whatsoever. However, for tax reduction, one would not recognize that the appraiser was talking about the same property. Poor location, poor transit facilities, lack of income, and the final fact that the building never should have been built, are stressed in vigorous language and this testimony brings tears to the eyes of the most hardened tax assessors and Commissioners in our Department.

The efforts to square these three appraisals on the same parcel of property amount to an amazing piece of intellectual skulduggery, intended to baffle and confuse the mind of the assessor or Tax Commissioner who is endeavoring to ascertain the truth. . . .

Some Illuminating Figures

The Corporation Counsel has recently issued a report on condemnation proceedings, decided during the court year beginning September 26, 1938, and ending September 24, 1939, and in such proceedings in New York and Bronx Counties before Mr. Justice McLaughlin, we find the following illuminating figures:

City's estimates of damage	$14,394,971
Claimants' estimates	25,214,700
Court awards	17,187,890

Your Honor's attention is called to the fact that the city's estimate of damage is approximately our present assessed valuations. However, in sworn applications for correction filed with the Tax Department, taxpayers usually claim a value far less than the assessed valuation, and in condemnation proceedings these same taxpayers claim values far in excess of the assessed valuations. Market price is entirely disregarded.

In Kings, Queens and Richmond Counties in condemnation proceedings, decided during the court year beginning September 26, 1938, and ending September 24, 1939, by Mr. Justice Lockwood, we find a similar condition, as follows:

City's estimate of damage	$17,686,022
Claimants' estimates	29,635,351
Court awards	19,511,467

Some real estate interests do not seem to be at all perturbed or concerned about the wide variance of values between taxpayers' sworn statements before the Tax Department and their sworn statements of values before a condemnation court.

It is our studied opinion that both Judge McLaughlin and Judge Lockwood are doing a splendid piece of work in condemnation proceedings, and that they are recognizing *full value* in their awards rather than fictitious value created by market prices under distress conditions. That philosophy should likewise be applied by the courts in certiorari proceedings. . . .

In our opinion, the fair valuation for tax purposes ought to approximate as closely as possible the valuation set by the courts in condemnation proceedings. Any other interpretation of full value would be questionable. The owner whose property has been taken in condemnation proceedings should not be asked to accept less than full value, and conversely, in judicial determinations, the same yardstick should be used in arriving at full value for tax assessment purposes. This proposition needs little argument, because the Supreme Court of the United States in the case of the *Great Northern Railway Company, v. J. J. Weeks,* State Tax Commissioner, in a tax certiorari case, handed down an opinion in October, 1935, which covers this point clearly and definitely. The opinion in part is as follows:

"The full and true value of the property is the amount that the owner would be entitled to receive as just compensation upon a taking of that property by the state or the United States in the exertion of the power of eminent domain. That value is the equivalent of the property, in money paid at the time of the taking. *Olson v. United States,* 292 U. S. 246, 254. The principles governing the ascertainment of value for the purposes of taxation are the same as those that control in condemnation cases, confiscation cases and generally in controversies involving the ascertainment of just compensation. *West v. C. & P. Tel. Co.,* 295 U. S. 662, 671.

"In determining the amount of the assessment the board was not bound by any formula, rule or method, but for guidance to right judgment it was free to consider all pertinent facts, estimates and forecasts and to give to them such weight as reasonably they might be deemed to have. Courts decline to disturb assessments for taxation unless shown clearly to transgress reasonable limits. Overvaluation is not of itself sufficient to warrant injunction against any part of the taxes based on the challenged assessment; mere error of judgment is not enough; there must be something that in legal effect is the equivalent of intention or fraudulent purpose to overvalue the property and so to set at naught fundamental principles that safeguard the taxpayer's rights and property. *Rowley v. Chicago & N. W. Ry.,* 293 U. S. 102, 109-111. The assessment is presumed to have been rightly made on the basis of actual value. Its validity must be tested upon consideration of the facts established by the evidence and of those of which judicial notice may be taken."

This is the opinion of the highest court in the land, and ought to have some appeal to lawyers and real estate experts engaged in tax reduction.

Conclusion

In conclusion, I repeat that the tax structure of a great city which depends for its revenue mainly upon real estate cannot be subjected to fluctuations in value from day to day, or month to month. A level must be established which has within it the elements of stability. Is it not strange that no one referred to *market value* as a criterion of value in boom times when assessed valuations were far below prices paid for property in that market?

Well-Landscaped Sewage Works Attracts Distant Visitors

Rose Garden, Rock Garden and Plantings Created by Bloomington and Normal Sanitary District Employees

By J. L. HASBROUCK

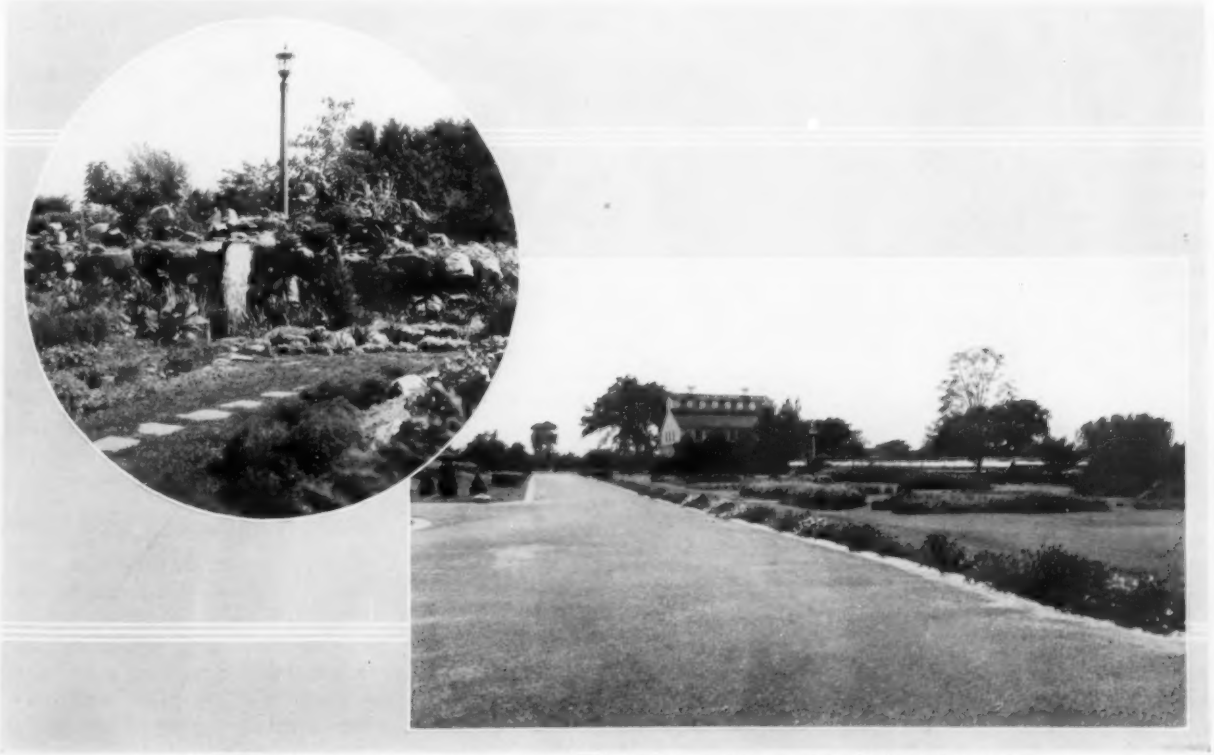
IF "sanitation means civilization," as was said by Dr. Henry B. Ward, nationally known student and author on conservation subjects, then why not dress sanitation in one of the choicest robes of civilization, namely, beauty? This is the general theory on which the Bloomington and Normal, Ill., Sanitary District trustees have proceeded in making their treatment plant one of the most pleasing spots in the district.

This treatment plant, now thirteen years old and established on a 50-acre tract just outside the city limits of these two communities, has been transformed from a bare or ugly site, as it was when first acquired for this utilitarian purpose, into one of the most beautifully landscaped public parks to be found in the state, as shown on the front cover of this issue of THE AMERICAN CITY. In consequence, instead of being a place shunned by the community, it is one most frequently visited by those who admire natural beauty fostered by the art of the landscape gardener and the floriculturist. The idea of beautifying the grounds of a sewage-treatment plant is quite in accord with modern thought.

Beauty Not Costly

In the Bloomington and Normal District the results have been achieved with a minimum of expense, because the work has been spread over a number of years, with a complete and definite plan to follow, and most of the work has been done by the regularly employed plant staff and paid for from the regular yearly operating budgets.

When the district acquired the ground, it was bare farm land. There were only three native trees on the site, and no ornamental plantings. Now, when the visitor looks over the grounds and sees hundreds of fine, thrifty trees, thousands of shrubs and flowering plants, he may marvel that this place is anything other than a park designed solely for beauty, and that it is in fact created and maintained for a purpose absolutely essential



Left—Waterfalls in Rock Garden. Right—Dosing Tanks Building and Sprinkling Filter Beds

The East Side of the Primary Settling Tanks at Bloomington, Ill., Showing the Japanese Trailing Junipers

to the health and happiness of the two cities whose people support it.

Very early in the treatment plant's history, a local nurseryman and landscape gardener became interested in the beautifying of the grounds. At first he gave it his attention out of professional pride and interest in the project, and this feeling has intensified since he became one of the trustees.

Results were naturally slow in development, because trees and plants require time to mature. But the comprehensive plan adopted at the start grew more evident year by year as additions were made to the number of trees, shrubs, and flowering plants. It is estimated that more than 15,000 trees and shrubs have been planted in the grounds, all harmonizing according to the general plan for hiding ugly spots and bringing into view the area most adaptable for each part of the general design. The administration building, the architectural center of the scene, is also made a central point for the landscape picture, being now half concealed in a screen of trees, shrubs and plants.

The primary settling tanks, 18 feet above the general level of the grounds on a hillock, have a sloping terrace skilfully planted to trailing Japanese junipers to avoid erosion, and preventing the necessity of mowing the grass on an 18-foot slope. South of the administration building is a rose garden where hundreds of varieties delight the eyes of flower lovers with continuous bloom through the season. In other parts of the grounds there are plantings of nearly a hundred varieties of hybrid or French lilacs, more than forty varieties of flowering crabs, and a dozen varieties of hardy deciduous magnolias.

The Rock Garden

The most distinctive feature of the whole layout is the rock garden, near the main entrance to the grounds, which has taken more than four years to reach its present state of attractiveness. The first three years were spent in building up from the flat surface of the ground a series of slopes, hillocks and diminutive valleys to form the background of the rock garden. Then native boulders of various shapes and sizes were added in the midst of which there is now a marvelous display of flowering perennials, about a hundred kinds of dwarf conifers, and other arboreal adornments.

Down from the highest point of the garden gushes a tiny waterfall whose overflow forms a little stream winding its way to a garden pool. This water is as clear as crystal, odorless and sparkling, and visitors are astonished to learn that it is the effluent from the treated sewage of the two cities. On its way this little stream passes over a section of white vitrified tile crossed by a single stone bridge, and reveals the constant clarity of the water. At the lower end of the garden the stream empties into the pool, where a large number of game fish, goldfish and turtles live happily among the water lilies.

All employees of the plant vie with each other in adding to the beautification of the grounds, employing any free time from their routine work in some small task to this end.

The local celebrity of the beauty of the grounds has extended to cities and towns within a radius of a hundred miles, bringing many individuals and garden club groups. Scores of motorists come every day during the summer and fall and, especially on Sundays and holidays, as many as half a hundred cars may be seen parked in the drives while the visitors wander over the grounds.

Since the beautification has been accomplished without addition to the regular operating budget of the plant after the original landscaping of the grounds, the results are doubly pleasing to the citizens of the district.

Beauty Emphasizes Efficiency

One of the major objects accomplished in making the treatment plant attractive to visitors has been to overcome complaints that "the taxpayers know nothing about the workings of their plant and only give attention to it when taxpaying

(*Concluded on page 81*)

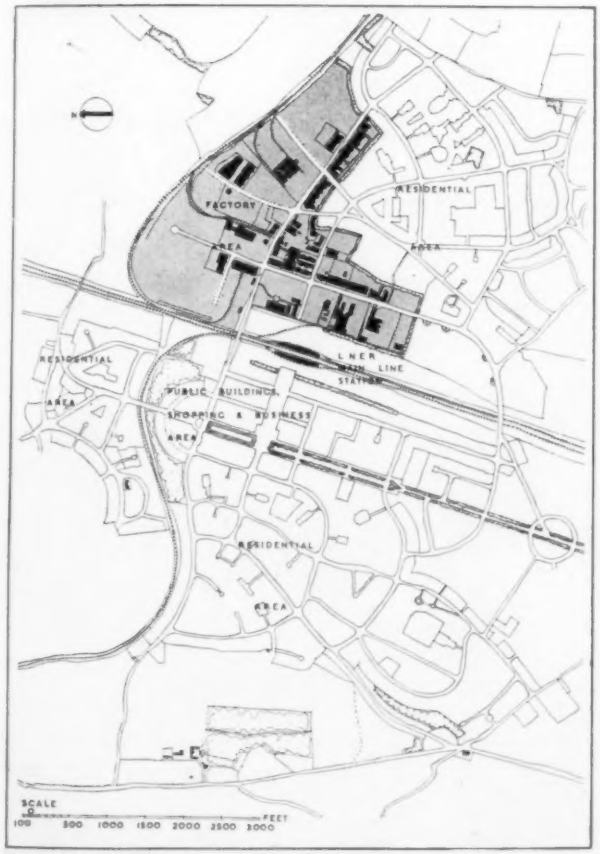
Problems of the Garden City and British Planning

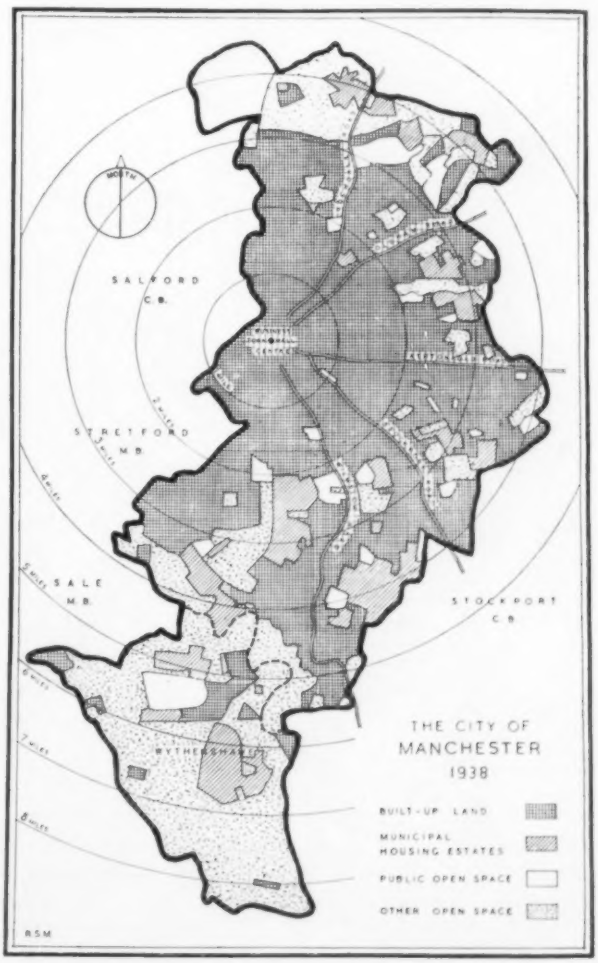
By Lee S. Greene
University of Tennessee, and Tennessee Valley Authority

THE development of the garden cities of Letchworth, Welwyn Garden City, and Wythenshawe has attracted wide attention to the ideas back of their creation. In spite of evident success along some lines, these cities have not been duplicated in Great Britain as might have been expected in view of the opportunities offered since 1919.

The expansion of British public housing has been almost spectacular. As a general rule, this housing has extended development at the urban peripheries, but there have been few cases of attempts to develop satellite towns or self-contained garden city units. The building of the great housing development at Becontree by the London County Council, and the policy followed in the construction of the Liverpool housing estates, are merely important instances of the general disregard for the possibilities of constructing self-contained satellites, in spite of repeated recommendations for such self-contained independent communities by the advisory planning boards of Great Britain.

Only recently the Special Areas Commissioners have embarked upon the development of factory estates for the attraction of light industry to the depressed areas. These estates are constructed as units, but no housing is provided, neighboring towns being relied upon for that service. On the other hand, there have been some tentative approaches to the self-contained satellite unit. The development of the semi-independent housing and industrial estate at Speke by Liverpool Corporation offers such an instance. Aberdeen has





MAP ABOVE, FROM THE ARCHITECTS' JOURNAL; AT RIGHT, FROM THE MANCHESTER GUARDIAN

Above—Plan of Welwyn Garden City, Showing Present Extent of the Industrial Estate

Right—City of Manchester, Showing Wythenshawe and Other Housing Estates

planned a similar development for Kincorth. An opportunity for the development of a garden city is offered to Glasgow by the housing requirements of that city, but whether such a plan will be adopted remains uncertain.

Social Problems of the Garden Cities

The governmental structure of the garden city constitutes a major problem. Letchworth and Welwyn Garden City are independent local units in the governmental sense, but Wythenshawe is an integral part of Manchester.* The Wythenshawe Committee of the Manchester Council is responsible for the development of the satellite. In the opinion of many, the provision of a Wythenshawe city manager is desirable, but this is impossible under present arrangements. Speke is similarly a part of Liverpool.

The great municipal corporations are reluctant to establish independent governmental units within their neighboring rural areas. They do not take kindly to the notion of increasing the rateable values of rural neighbor units with which they are often in dispute. This is certainly understandable in part, inasmuch as the parent city must furnish certain services, at least for a time. On the other hand, some of those services could be provided by the parent corporation as landlord. For the remainder, some aid from the national government must certainly be forthcoming if independent units are to be established. There is a real danger that Wythenshawe will become merely another extension of the Lancashire conurbation.

After many years of unprofitable operation, Letchworth and Welwyn began to pay dividends to their shareholders. The long years of waiting between capital investment and return discourage private investment in similar ventures, thus throwing the burden of extending such developments on governmental units. It is fairly clear that Manchester and Liverpool expect to reap profit from the development of Wythenshawe and Speke, respectively, although at present these developments have not reached the point of yielding a profit.

A sociological problem has been created in many of the English housing estates because only one class of people was settled on the estate. This policy—if it is conscious enough to be called a policy—results in a tendency to accentuate the great city's segregation of income groups. The London County Council estate at Becontree is a glaring example of such segregation because of its great size. Norris Green Estate in Liverpool furnishes another.

It certainly is an inherent part of the garden city idea that such cities should comprise a balanced mixture of various income groups. This idea was included in the Wythenshawe concept, but at the present time the amount of municipal housing far outnumbers private development. Hence, there is a tendency for the satellite to be stamped as a Manchester Corporation housing project and for private builders to be frightened away.

Within the garden cities themselves, the ideal of mingling income groups has been present. As is perhaps inevitable, in view of the natural tendency for certain areas to be preferred as residential districts, there is evidence that class segregation has gone further than might be expected in a thoroughly ideal situation. Slums do not exist.

Neither Welwyn nor Letchworth has yet grown to the population limit envisaged for them. Will they be able to resist pressures for excessive expansion if that pressure comes in time? In the case of Wythenshawe a population of 100,000 is planned. There is grave doubt whether this size is not too great to permit the realization of political and social ideals of the garden city.

Contributions to Physical Planning

The garden city idea has made at least two great contributions to planning in Britain. For one thing, it has made the importance of communal land ownership as a basis for successful planning quite clear, and the lesson has been reinforced by the failures of planning where such communal land ownership does not exist. The second contribution of the garden city is the idea of the agricultural belt designed to stop the coalescence of neighboring units into sprawling urban masses.

The idea of the agricultural belt has been extended beyond the garden cities in England. Such belts, consisting of parks and agricultural land, are being provided, at least in part, around London, Birmingham, and Liverpool. But everywhere it appears difficult to establish that belt with sufficient definitiveness and strength to resist onslaughts against it. The Letchworth belt is a relatively strong one, but it is narrow at some points, at which neighboring towns threaten coalescence by ribbon development. The Wythenshawe belt is not entirely complete, and on the Manchester side it is so narrow that coalescence with Manchester may be threatened in the future. In Welwyn a tendency on the part of the management of the Welwyn Garden City Corporation to use the belt land for building is occasioning some alarm among members of the community. Proposals have been made for restricting the corporation by crystallizing the town plan into one with a governmental sanction. Hitherto, planning powers have resided in the private company of Welwyn Garden City. Only a very narrow belt is provided between Liverpool and Speke, and this open space is largely taken up by the airport.

The effect of a failure to provide belts may be studied in the experience of many housing estates. Norris Green in Liverpool has been surrounded by the expanding city. Becontree has experienced the same trend. An interesting example of this trend is to be found in the construction by the Special Areas Commissioner of the Team Valley Trading Estate on the outskirts of Gateshead. No agricultural belt was provided, and the surrounding areas have been promptly acquired by land speculators, with a view to development. The result may prove to be only half a garden city, providing an industrial development,

* EDITORIAL NOTE.—In "Manchester Made Over," by Alfred P. Simon, published (1936) by P. S. King & Son, Ltd., Orchard House, 14 Great Smith Street, Westminster, S. W. 1, London, England, the author deals, in terms of analysis and coordination, with the problems of Manchester's constituent areas and its satellite town of Wythenshawe, and the relationship of the sections to the whole. xiv + 106 pp. Price, 5s.)

PHOTOGRAPHS COPYRIGHT STUDIO LISA, WELWYN GARDEN CITY

Howardsgate, Welwyn, Showing the Shredded Wheat Company's Factory in the Background

admittedly of high order architecturally, without the housing attached to form an independent unit.

The garden cities have not had perfectly clear weather with the architects. In the housing field in general, controversy between the proponents of large apartment houses and those supporting cottages has grown increasingly warm, with insinuations in some quarters that flats are often favored because they offer greater opportunities for striking architectural design. On the other hand, the architecture of the garden city has been bitterly attacked by Thomas Sharp, whose objections are not to the segregation of a medium-sized city from other urban areas, but rather to the disregard of "urban" order and taste in architecture in favor of individual cottages. Sharp would apparently see some of the communal order of Bloomsbury façades framed in the garden city setting. Although some of his criticism seems excessively unrestrained, it remains true that the garden cities follow the established conventions in housing architecture apparently most agreeable to British taste. Those who prefer the modern functional approach must seek satisfaction rather in some of the industrial plants.

A special planning problem connected with size arises with respect to civic centers. In the case of Welwyn and Letchworth, the town is not too large to permit a certain unity to be retained, but in the case of Wythenshawe doubts are already expressed as to the possibility of the proposed civic center overcoming a tendency for the community to split into component parts. The danger is particularly great because Wythenshawe has no political status of its own, a serious handicap from practically every point of view.

In spite of these difficulties and inadequacies, the garden cities stand as one of the most significant achievements of British planning. In the total program of planning they constitute the major positive aspect of a system which in general outlook is primarily negative. British planning on the whole is chiefly concerned with zoning, and shows all the disadvantages of a scheme for controlling private landowners with speculative urges. It is difficult to be very enthusiastic about British achievements in this direction, and the British planners themselves have indicated the progressive erosion of their patience. The garden cities have been based on a program of building, not regulatory rule-making, and the difference in the results of the two approaches is striking enough.

Above all, the garden cities offer the only housing program viewed in relation to life as a whole. Elsewhere the stupendous construction program of Great Britain has proceeded to spread housing estates over the entire country without, on the whole, careful attention to location with respect to places of work, without attention to a rational governmental structure, and without the cooperation between neighboring units of government essential to the sensible location of housing estates. It is hardly too much to say that the beneficial effects of British governmental housing on city planning have been negligible. In some instances the effect has been malignant.

National Policy and the Garden Cities

The garden cities have been established without aid from the national government. In the case of Wythenshawe, the city of Manchester actually had to meet obstructionist tactics on the part of the national government. Recently, however, the approaching reality of air raids has forced a change of view. The size of London, not

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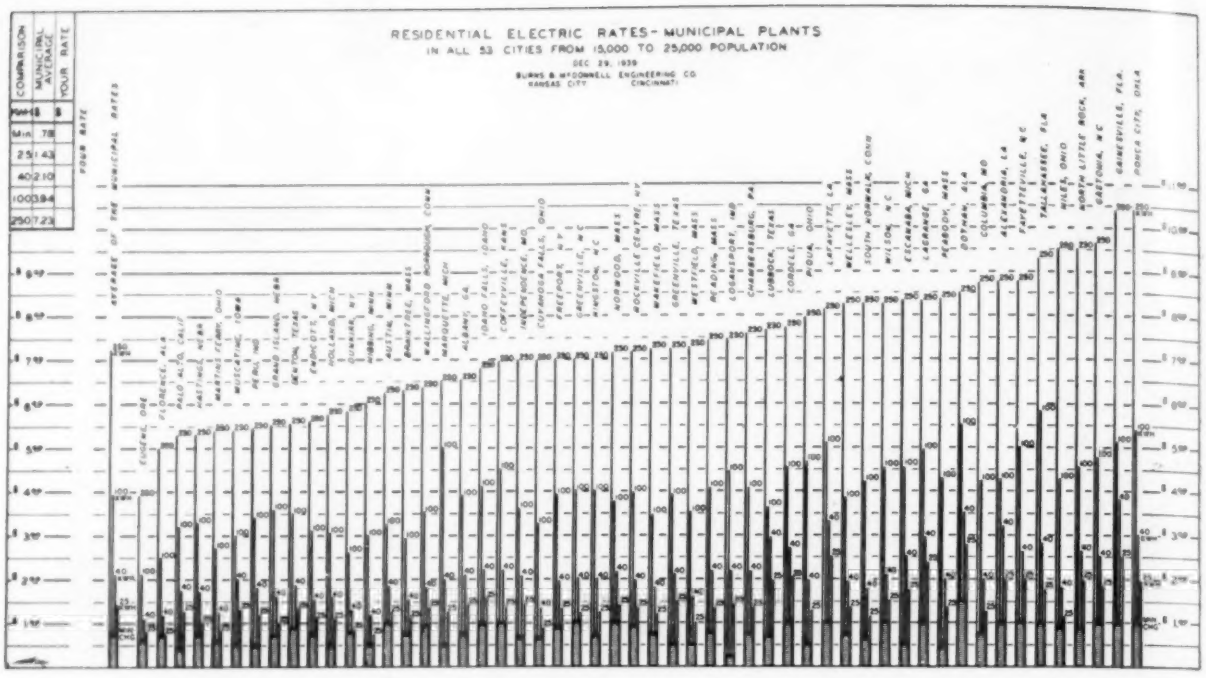
Pleasant Group of Working-Class Houses in Welwyn Garden City



Municipal Electric Rates

By R. E. McDonnell
Burns & McDonnell Engineering Co.
Kansas City, Mo.

NUMBER OF CITIES SERVED BY ELECTRIC PLANTS

Population	Municipal	Private
50,000 up	21	172
25,000 to 50,000	32	163
15,000 to 25,000	53	228
7,500 to 15,000	107	554

IN THE above four groups of cities, tabulated on these facing pages, the ratios of municipally owned to privately owned electric plants are respectively 1 to 8, 1 to 5, 1 to 4, 1 to 5. It is believed that these municipal plants are pace setters in establishing rates, and do far more toward the regulation of rates than all the state utility commissions combined. The tabulations indicate the rates charged for 25, 40, 100 and 250 kwh by practically all the municipal electric systems in municipalities of 7,500 population or more.

There were, on January 1, 1940, 2,086 municipalities selling or using their own electric energy. A quarter of these municipalities buy power wholesale and own their distribution systems. The others produce as well as distribute.

In general, the cities charge less for electricity than do the private companies in the same area. The chief reason for this is that a majority of the city-owned systems have retired their bond issues. Many of them have nominal fixed charges.

Machines Speed Charlotte's Budget Accounting

THE BUDGETARY ACCOUNTING of the city of Charlotte, N. C., is considerably speeded by two Burroughs bookkeeping machines. One posts our subsidiary ledgers, including the budget expense and revenue ledgers; the other posts the general ledger accounts of all funds.

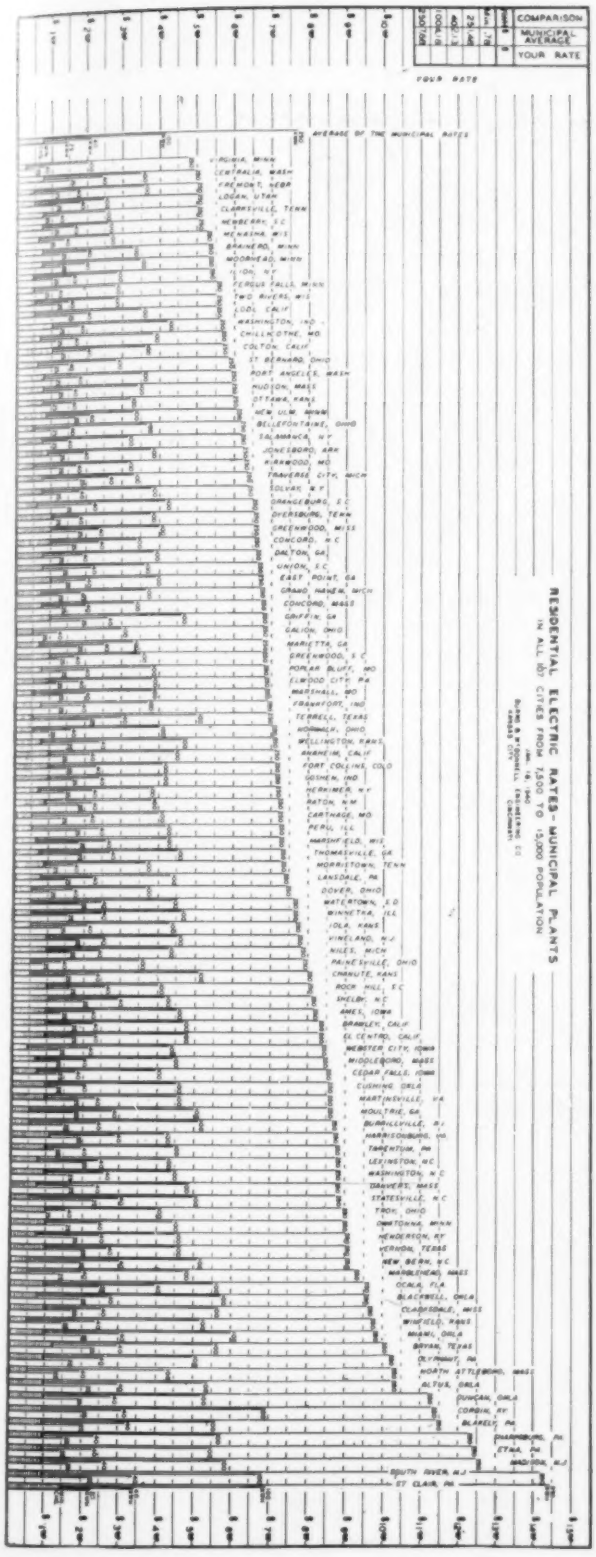
We have four budget funds: General; Water and Sewer; General Debt Service; and Water and Sewer Department Service. In each of these funds we have a control account for operating expense and operating revenue. At the end of each month the detailed expense accounts and revenue accounts in the subsidiary ledger are balanced with the respective control accounts in the general ledger.

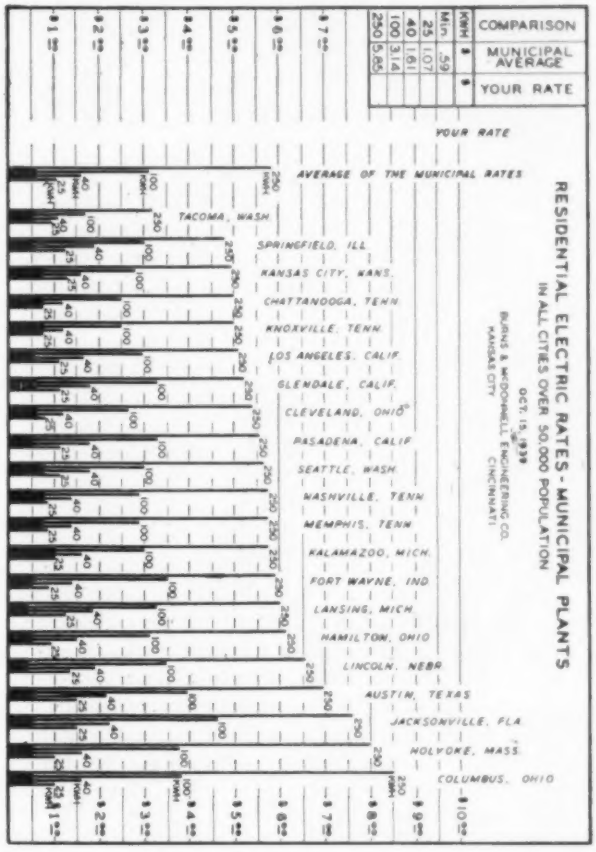
After the detail accounts are balanced with the controls, a monthly statement of budgetary operations is submitted to the City Manager to inform him on how the expenses and revenues compare with the budget allotment. In other words, this monthly statement shows whether the expenses are being held within the budget, and whether the revenues are being collected as required in the budget.

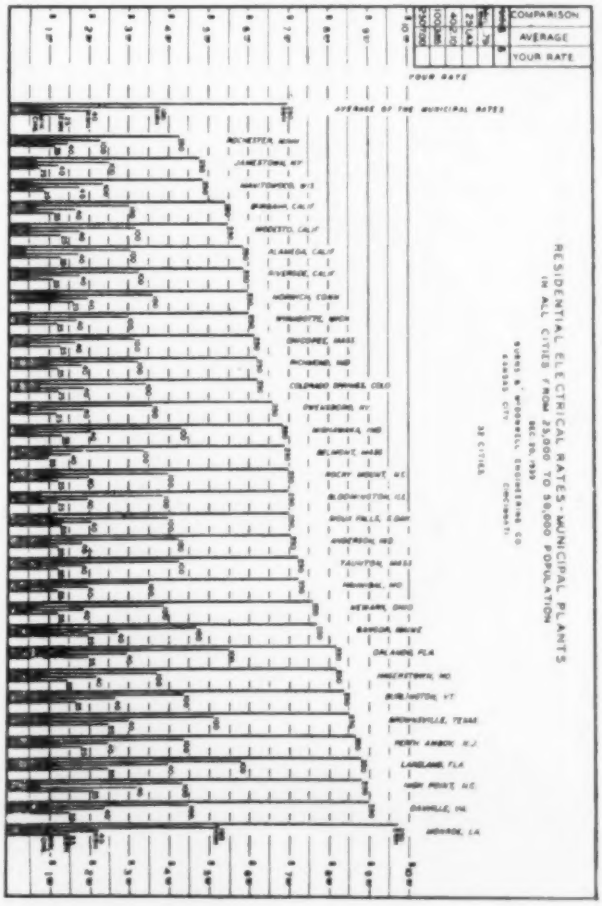
In the budget ledgers we have controls by departments, within the fund, over the various expense and revenue accounts, and these controls must equal the two control accounts for operating expense and revenue of the particular fund in the general ledger.

After the budget for the fiscal year is adopted, the amount budgeted for each item of expense and revenue is placed in the top left-hand corner of the ledger sheet. At any time, the unexpended balance of an expense account can be obtained by subtracting the total expense as shown on the ledger account from the budgeted figure. We do not carry the unexpended balance on the ledger sheet, but only the accumulated total of the account. The balance unexpended as well as the revenue unrealized are shown on the above-mentioned statement.

J. M. McCorkle,
Municipal Accountant, Charlotte, N. C.







What the Municipal Electric Systems Charge their Residential Customers for 25-40-100-250 Kwh in Four Population Groups of Cities on These Two Pages

Ypsilanti, Mich., Improves Well-Water Supply by Reducing Iron Content in

Municipal Softening Plant Using Lime and Soda Ash

By Theodore Reed Kendall
Engineering Editor, The American City

THE many interesting features of the new water-softening plant recently completed and placed in operation at Ypsilanti make it worthy of record in these pages. The well-water supply of many years standing has a high iron content of 1.6 ppm, considerable hydrogen sulphide, and a total hardness of 395 ppm. The new plant reduces the obnoxious gases by effective aeration, reduces the hardness to 90 ppm by lime softening, and by soda ash and filtration removes much of the iron, so that now the water in the clear well has less than 0.3 ppm of iron.

The raw water is taken from 22 8-inch wells by two De Laval 6- and 8-inch low-lift pumps with Westinghouse motors which take suction through an 18-inch pipe and discharge into a 14-inch header delivering the water to the 34 nozzles on the aerator on top of the clarification tank. A Sparling meter between the pumps and aerators measures the flow delivered to the plant. Because the wind carried some of the spray from the aerators over the edge of the basin and tended to stain the front wall, ten more nozzles were added to the aerator to reduce the velocity and head; this also lessens the power consumption on the pumps.

Mixing and Coagulation

The water from the aerator flows to the center of the slab and then through a cast iron pipe to the first mixing chamber, where the chemicals are added. In this chamber a General Electric 3-hp motor drives six paddles through a Link Belt reducing gear in 24 feet of water at 20 rpm. The water then flows to the No. 2 mixing chamber, which is the same size and receives more mixing with duplicate equipment. The well-mixed water and chemicals then flow to the two coagulation tanks, in which the stirring is continued at a slower rate to prevent settling and also to increase the size of the floc. The stirring equipment here consists of 3-hp 4-speed G-E motors and Link Belt reducing gears driving the paddles.

The water then flows outside the

Front of the New Filtration Plant at Ypsilanti, Mich.

building to the upper settling or primary tank, which has two hoppers at the end toward the building, toward which the Link Belt Straightline sludge collector pulls the sludge from the far end against the slow flow of the water away from the building. The clarified water then flows over four weirs into a flume, where it is recarbonated, and drops into the lower settling tank beneath the clarification tank. This tank is baffled and the water returns to a continuation of the carbonation flume before it enters the 14-inch cast iron pipe leading to the filters.

Filtration

The two filters are of 1 mgd each and have 18 inches of gravel, 32 inches of filter sand, and 24 inches freeboard from the top of the sand to the top of the wash-water troughs. The operation of the filters is controlled by an hydraulically operated Infilco filter control table between the two filters, on which is mounted the rate-of-flow gage and the wash-water rate-of-flow indicator, as well as the actual record of the amount of wash water used for each wash. The filters are washed at a 28-inch-per-minute rise.

A small wash-water pump in the basement pumps direct from the clear well beneath the filters to the 30,000-gallon wash-water tank in the fourth story of the plant. This pump is a 100-gpm De Laval unit driven by a 3-hp Westinghouse motor. One of the interesting features of the plant is the steel weir edges of the wash-water troughs, which are set very accurately, so that when the water first breaks over the edge at the front of the filter it immediately breaks for the entire length of the two troughs in the filter. The weirs are bolted to the base troughs, making adjustment easy, and are supported at mid-length by rods from above to insure a level weir.

Recarbonization Equipment

The recarbonization equipment is installed in the basement and consists of a complete plant, designed by W. C. Mason, of Chicago, which burns artificial gas in a special retort to produce the maximum amount of carbon dioxide gas. The products of combustion are run through two scrubbers filled with coke and steel shavings. The combustion of the gases is aided by a Roots-Connersville blower which forces the gases through the scrubbers and thence to the Republic CO_2 meter and to the recarboniza-

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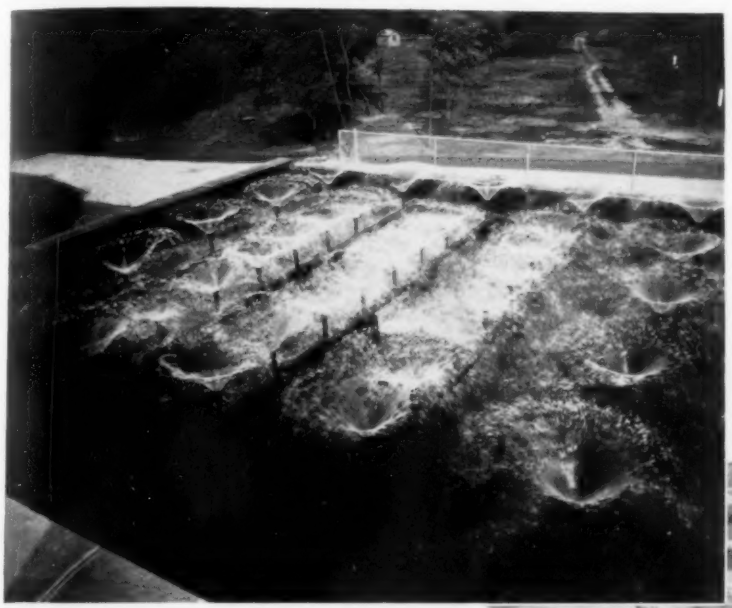
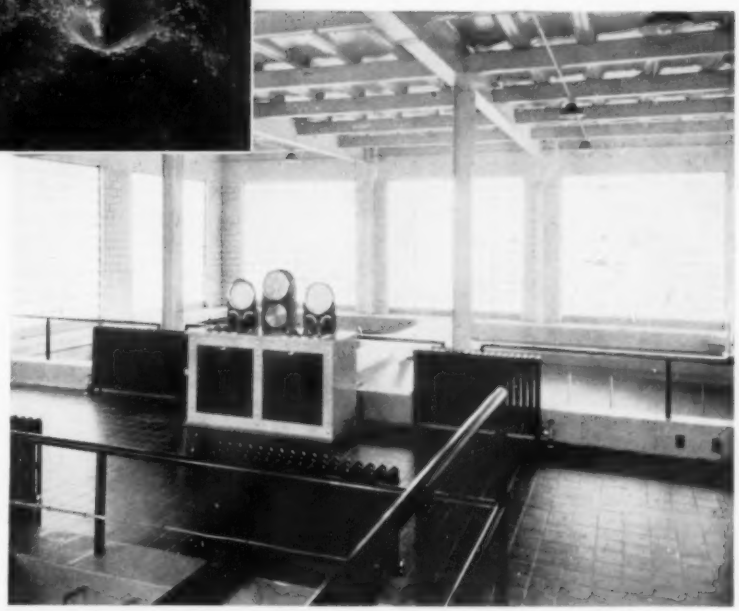


At left—Aeration Basin, Showing the Excellent Distribution of the Spray

Below—Interior of the Plant, Showing the Filters, Control Table and Glass Block Window Construction



OPERATING DATA, DECEMBER, 1939

	Total Hardness ppm	Non-Carb. Hardness ppm	Iron ppm
Raw Water	355	104	1.6
Finished Water	89	50	.0-trace
Hardness Removed	266	54	1.6

	Lime 90% ppm	Soda Ash ppm	Catalyzer for floc. ppm	CO_2 ppm
Chemical Dosage	200	37	1.5	59

Malvern, Arkansas, Builds New Sewage Works

Two-Mile Outfall Line Built First, Followed by Construction of Primary Treatment Plant

By D. Y. McDowell
Superintendent, Sewage-Treatment Plant, Malvern, Ark.

THE city of Malvern long since outgrew its Imhoff tank, built over twenty years ago, so in 1933 it secured enough funds, $30,000, for a new 10,250-foot outfall, 18 inches in diameter, on a grade of 0.1 per cent, and 15-inch on 0.2 per cent grade at points where the line crossed streams; and in other places below grade, a total of about 800 feet, 16-inch cast iron pipe was used. The 15-inch pipe was bell-and-spigot concrete, and the 18-inch pipe tongue-and-grooved concrete and bell-and-spigot glazed terra cotta pipe.

In 1938 sufficient money had been saved from the operating revenue of the water plant to finance the sponsor's share of a modern sewage-treatment plant, which the State Board of Health had directed must be built on the outfall line at a greater distance from town than the old Imhoff tank. Guy A. Watkins, designing and consulting engineer, of Little Rock, Ark., prepared a WPA project to cost $14,000, of which the WPA share was $8,500 and the sponsor's share $5,500.

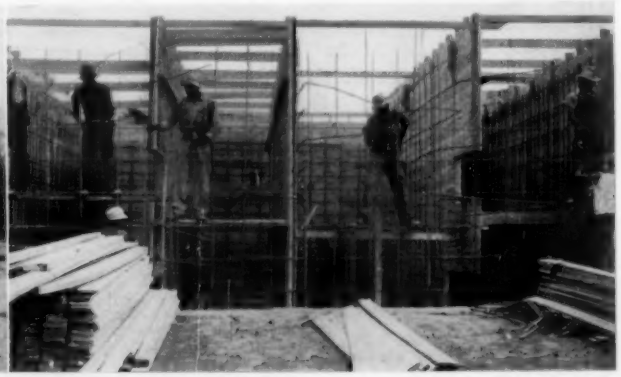
The Cost of Infiltration

The sewerage system of Malvern, like many older systems, has a great deal of infiltration during the rainy season, particularly when the river is high. This increases the flow received at the sewage-treatment plant to such a point that the endeavor to treat all of it would be prohibitive. The new plant was therefore designed to take care of a maximum daily flow of 300,000 gallons, which is more than the normal flow as determined by weir measurements of the sewage flow in the outfall line. The design also provided for doubling this capacity and adding filtration and sterilization at a future date.

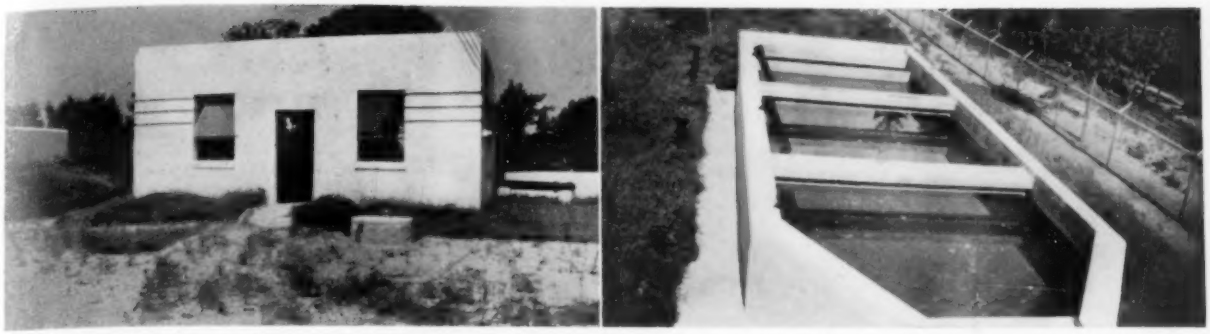
In order to by-pass the excess flow, a weir was placed in a diversion chamber in the line so that all water in excess of the two 100-gpm Shone ejectors which raised the sewage in the plant for treatment is diverted direct to the outfall line. As excess infiltration occurs only when the flow of the river is above normal, the ratio of dilution is satisfactory.

The Plant

Work on the plant was started July 1, 1938. It is located on the outfall line about ¾-mile from the city limits and ½-mile farther from town than the old Imhoff tank, and is on a gravel company's railroad, which made it possible to get sand and gravel for the concrete work delivered at minimum expense. All excavation was done by hand, and shallow excavations did not have to be sheeted, since perhaps 6 feet of the ground has enough clay to



The construction of the Malvern, Ark., sewage-treatment plant, showing, at left, the steel reinforcing in place at the front end of the primary settling tank; below at left, the control house is shown under construction, using green sweet-gum saplings for the uprights of the scaffolding; below at right, the men are shown placing the inside reinforcing steel for the digester



The Control House of the New Sewage Works at Malvern, Ark., and the Primary Settling Tank as Seen from the Top of the Control House

hold it in place. Below this is a water-bearing sand which made excavation difficult even with sheeting. This was encountered in only one structure, the basement of the control house, which was excavated to a depth of 12 feet. The WPA engineer, W. Terry Field, ordered a well 4 feet in diameter dug as close as possible to the basement excavation. The well was carried at all times just below the excavation in the basement, so that the water in the sand flowed toward the well, from which it was pumped by a 150-gpm self-priming centrifugal pump driven by a gasoline engine. The well was dug to the water-bearing sand, and then a reinforced concrete footing was poured in place to support a brick curb which was built up to the ground surface. This footing is 18 inches high and 6 inches thick at the top, and slopes from the top to a knife-edge at the bottom. The well has been continued in service and is located at the right of the front door of the control house. It furnishes an abundance of water for use throughout the plant.

Treatment Provided

The new sewage-treatment plant provides primary sedimentation, separate sludge digestion, and drying of the digested sludge, with the structures so arranged that other units needed in the future for secondary sedimentation and sterilization may be added at minimum cost.

Sewage is received at the plant through the diversion weir chamber into a grit and screen chamber, from which it flows by gravity to two 100-gpm Shone ejectors in the basement of the control house. These ejectors lift it to the surge tank, a distance of about 15 feet, by compressed air. From the surge tank the sewage flows by gravity into the primary settling tank, which has a normal detention period of five hours. Floating solids are removed by two skimmer troughs, one at each end. The settled sludge and floating solids are drawn off daily by gravity into a sludge pit, and are then pumped by a 50-gpm Shone displacement pump into the top of the digester. After digestion is complete, the sludge is drawn off by gravity to the sludge drying beds. After drying, the sludge is removed from the sand and is hauled away rapidly by farmers, who use it as fertilizer. The supernatant liquor, flowing from the top of the digester, flows by gravity back into the influent line just ahead of the diversion chamber, for complete plant treatment.

The water drains from the sludge on the drying beds, flows through the sand and gravel to the underdrains, and thence to a manhole, where it mixes with the effluent from the primary settling tanks and goes to the river.

A bit of unusual design is the primary settling tank, the inlet end of which is tapered, causing the sewage to fan out as it enters, and tends to prevent short-circuiting, giving the sewage an even flow through the tank.

Compressed air for operating the pneumatic ejectors is furnished by two Shone compressors, each direct-connected to a 1½-hp, 1,750 rpm, 220-volt motor. The operation of the motors is controlled by pressure switches that cut in and out as the pressure in the air storage tank varies.

The final figures of the cost of the project are: WPA, $15,945.79; sponsor, including engineering fee, $6,404.35; total $22,350.14.

"Roof Over America"--New Radio Series

BEGINNING March 24, and continuing for 13 weeks, a new series of 30-minute radio programs, cast in dramatic form, and entitled "Roof Over America," will be heard every Sunday at 2:00 P.M., over more than 100 Columbia Broadcasting System stations. The series is part of the Democracy in Action series, and is being put on by the U. S. Office of Education, with the cooperation of the various Government housing agencies.

Some of the broadcast titles include: What Do You Mean "Home Sweet Home"?; How We Got That Way; What Price Bad Housing; Houses That Jerry Built; Doing Something About It; Rooms with a View; Keeping the Factory Fires Burning; Uncle Sam on the Housing Frontier.

At the same time, a popularly written booklet telling the story of America's efforts to improve its housing will be issued to supplement the broadcasts. It will contain besides the housing story, a simplified key to the functions and services of all Federal and home-finance agencies. Exhibits sponsored by Government housing agencies will also be displayed in schools and colleges and at meetings of public and educational groups.

Teachers, educators, and dramatic groups interested in using "Roof Over America" scripts may secure them, after they go on the air, from the U. S. Office of Education's Radio Script Exchange.

Pulverizing

Mixing

Water Added

Soils Laboratory

Columbia Paves with Soil Cement

Alva Arnold, Superintendent

Barber, Soils Engineer

Tomlinson, City Engineer

By W. S. Tomlinson
City Engineer

DURING the past 12 months, there have been more streets paved in Columbia than in the previous 150 years. This record is the result of a 400,000-square-yard soil-cement street-paving program, involving a joint investment by PWA, the city, and property owners of $1,342,000.

The selection of a paving type for our current improvement program was dictated by two factors:

1. Because little paving had been done in Columbia for many years, residential expansion had developed a tremendous backlog of needed street improvements. If we were to be at all successful in filling these needs, available funds would have to be spread a long way.

2. Since the streets requiring improvement were located in residential areas, it was apparent that a light traffic surface would answer our needs most economically.

With these factors in mind, we cast about for paving material that would fill the bill. At first, sand-clay was considered, but it was ruled out when it was discovered that the long haul necessary would prove too expensive, and because it does not lend itself particularly well to contract construction.

Soil Studies

At this point, soils in the Columbia streets were tested to determine the feasibility of soil-cement construction—a method with which we were familiar because of the extensive soil-cement work that has been undertaken by the South Carolina Highway Department. These preliminary tests, run at the Highway Department's Soils Laboratory, proved most encouraging. We then set up our own laboratory, and our soils engineer, G. E. Barber, in cooperation with the Portland Cement Association, conducted a thorough series of tests, including particle-size analyses, moisture-density relations, wetting-drying and freezing-thawing durability tests, on samples taken from all horizons of the various soil types occurring in Columbia. The map shows the classification and distribution of the various soil types occurring in Columbia. With the data obtained from the identification and mapping of all soil horizons and the laboratory testing of all representative soils, later testing and field control were greatly facilitated. The map also shows the location of soil-cement streets in Columbia.

Results showed that the dominant soils—Norfolk and Orangeburg—could be stabilized with from 6 to 8 per cent cement.

Contracts Awarded

The program was divided into five contracts. Construction on contract No. 1, let to the C. G.

More Mixing

Processing an Intersection

Sheepsfoot Rolling

Fuller Co., of Barnwell, S. C., began September 1, 1938. Since that time four additional contracts have been let, two to the C. G. Fuller organization, one to the Wesco Co., of Chattanooga, Tenn., and one to the Hardaway Contracting Co., of Columbus, Ga.

The Columbia contracts call for a 5-inch soil-cement base, a tar prime and an inverted penetration mat with a cold-laid Class "J" asphalt sheet on top. In addition, the contracts include laying storm drains, adjusting water and sewer pipes, placing a 6 x 36-inch integral curb and gutter and a 4-inch x 5-foot sidewalk.

Construction followed the mixed-in-place method. Machine mixing was tried but proved too inflexible for the restricted working area.

Operations

A summary of mixing, compacting and finishing operations follows:

1. Soil is scarified and pulverized the previous day with a Caterpillar No. 12 motor patrol and a disc harrow.

2. Pulverizing continues and moisture is checked the first thing the next morning.

3. Cement is placed across the street in windrows and spread evenly with a spike tooth harrow.

4. Cement is cut-in first 3 inches with a disc harrow, and then to subgrade with a 14-inch flat-bottom plow. The subgrade is checked with a string from curb to curb.

5. Pulverizing and mixing continues, additional water being added from time to time to bring soil to its optimum moisture content. A Seaman Triple Tiller, used for the first time on this job, has proved very successful in pulverizing and mixing operations.

6. Compaction begins with the sheepsfoot roller compacting at least 3 inches of the 5 inches, before the blade is put on, and continues until the roller has completely walked out.

7. A motor patrol blade compacts and sets the grade at the same time.

8. Final finishing is obtained with a rubber tire roller.

With strict laboratory control in effect at all times and using the methods and equipment described above, the contractors were able to complete the equivalent of 2,565 feet of 20-foot roadway in a single day's work. In addition to the economy of soil-cement construction, this quality of speed is particularly convenient, since each section is finished up to where traffic can use it at day's end, thus blocking traffic for only one day at a time.

When the program is completed, there will be some 244 blocks of soil-cement streets in Columbia. Of the total cost, 45 per cent is in the form of a PWA grant, 13 per cent from the city, and 42 per cent from property owners, whose payments may be spread over a 10-year period with a 4 per cent interest charge on the balance due. Paving certificates bearing 4 per cent interest

Compacting

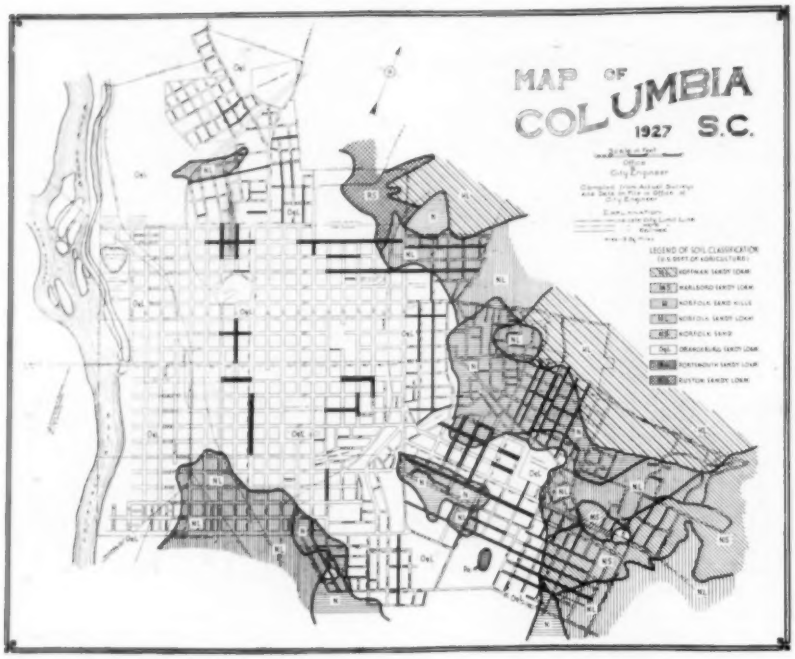
Starting Asphalt Surface

Completed Street

Another Completed Street

TABULATION OF UNIT PRICES FOR THE FIVE COLUMBIA, S. C., SOIL-CEMENT PAVING CONTRACTS

Contract Number	1	2	3	4	5
5" soil-cement base (sq. yd.)	$ .48	$ .52	$ .45	$ .52	$ .41
6" x 36" integral curb and gutter (lin. ft.)	1.00	1.10	1.04	.86	.85
4" x 5' sidewalk (sq. yd.)	1.50	1.60	1.50	1.30	1.35
Top—.2 gal. tar prime, 35 lb. inverted penetration mat, 75 lb. cold laid Class "J" asphalt sheet (sq. yd.)	.55	.55	.56	.53	.44
Sq. yds. in each contract	56,732	90,993	126,672	77,400	49,079



Map Showing the Distribution of the Various Types of Soils in Columbia, S. C.

were sold to a bonding house.

Alva Darnold is superintendent of construction for the C. G. Fuller Co., Manuel Russ for the Wesco Co., and Ambrose Harwell is general superintendent for the Hardaway Contracting Co. The resident engineer for the city is C. R. Sanders, and Assistant City Engineer Harry O'B. Bellinger is in charge of the program.

Stabilization in the 1940 Municipal Index

Articles on low-cost paving and stabilization with calcium chloride, sodium chloride, asphalt and soil-cement.

Garbage Collection Fees in Miami

Ordinance Specifies Rates, Size, Number and Collection Frequency

ON August 23, 1939, an emergency ordinance was passed by the City Commission of Miami, Fla., instituting a charge or fee for the service rendered by the city in the collection of garbage from residences, stores, restaurants and other establishments. The city makes an annual charge of $4 for the removal of the contents of two garbage receptacles twice a week. The ordinance does not limit the size of the container, but states that they shall be "covered metal or other receptacles which shall be of a size, type, and design approved by the Department of Public Service."

The Director of Public Service, William Sydow, has prepared the following specifications for receptacles which are acceptable for handling by the city collection crews:

"Garbage cans must be not less than 15-gallon and not more than 25-gallon capacity; must be made of metal; in sound condition with bails or handles and with metal covers. If a trash barrel is used, it must be of light construction and have a metal cover. No garbage shall be placed in trash barrel."

Fees

The annual fee is $4, which may be paid on or before October 1 of each year, or in semi-annual payments of $2 on or before October 1 and April 1. The Finance Department collects the fees, furnishing the applicant with a receipt and a metal disc which are displayed near the garbage receptacle where the collectors can easily see it. A square aluminum tag indicates that payment has been made for service for a full year in advance, while oval tags are used for semi-annual payments, and small diamond-shaped tags for the collection for each additional receptacle of the regular twice-a-week schedule. Extra collections from stores, shops, hotels, boarding houses, and similar establishments where large quantities of garbage require more than two collections a week, are taken care of by an additional charge of 10 cents for each collection of garbage from each receptacle. This money is collected by an inspector, who has authority over truck drivers, and is held responsible for service given this class of customers.

The remainder of the ordinance prohibits any disposal of garbage other than by public collection, requires drainage of all garbage before placing in the standard garbage receptacle, and further requires that it be wrapped and that garbage receptacles be tightly covered at all times. Section 4 states:

"The performance on each day of any act or practice declared to be unlawful under Section 3 hereof shall constitute a separate and distinct violation of this ordinance, and a separate offense hereunder, and shall be punishable as such."

Violations are punishable by a fine not exceeding $300, or by imprisonment for a term not exceeding 30 days, or by both such fine and imprisonment within the discretion of the municipal judge.

The first collections under the new arrangement began promptly on October 1 and there has been little difficulty in the collection of the fees or the general execution of the ordinance.

St. Paul Builds Ice Palace for Mid-Winter Carnival

Crowning of King and Queen, Colorful Parades, and Spirit of Fun Feature Festivities

ST. PAUL, MINN., has capitalized on its winter by lifting its citizens into a joyous carnival spirit each year for an eight-day period at the end of January, with an ice carnival featured by a gigantic ice palace and general festivities. Marching clubs in gala costumes and uniforms with drum corps and bands parade the streets for days before the crowning of the King and Queen and the dedication of the ice palace.

The 1940 ice palace was located on a knoll in Como Park. The city built the palace, but throughout the entire community individuals piled block on block of ice and cut and chipped them into sculptured forms of animals or men of great proportions for prizes offered by civic and business organizations.

This year's ice palace, composed of 4,000 tons of 450-pound blocks of ice, contained turrets and battlements carefully designed by Charles A. Bassford, City Architect. The huge blocks of ice are handled during construction just like blocks of granite or other durable material by steam cranes and a material elevator. While generally the walls are self-supporting, some of the highest sections are framed with heavy timbers inside. Water poured on a block of ice is the cement for holding the next block to it. For windows, sheets of wallboard with frames are set in slight recesses in the walls with a box at the bottom containing a floodlight to illuminate the light-colored wallboard.

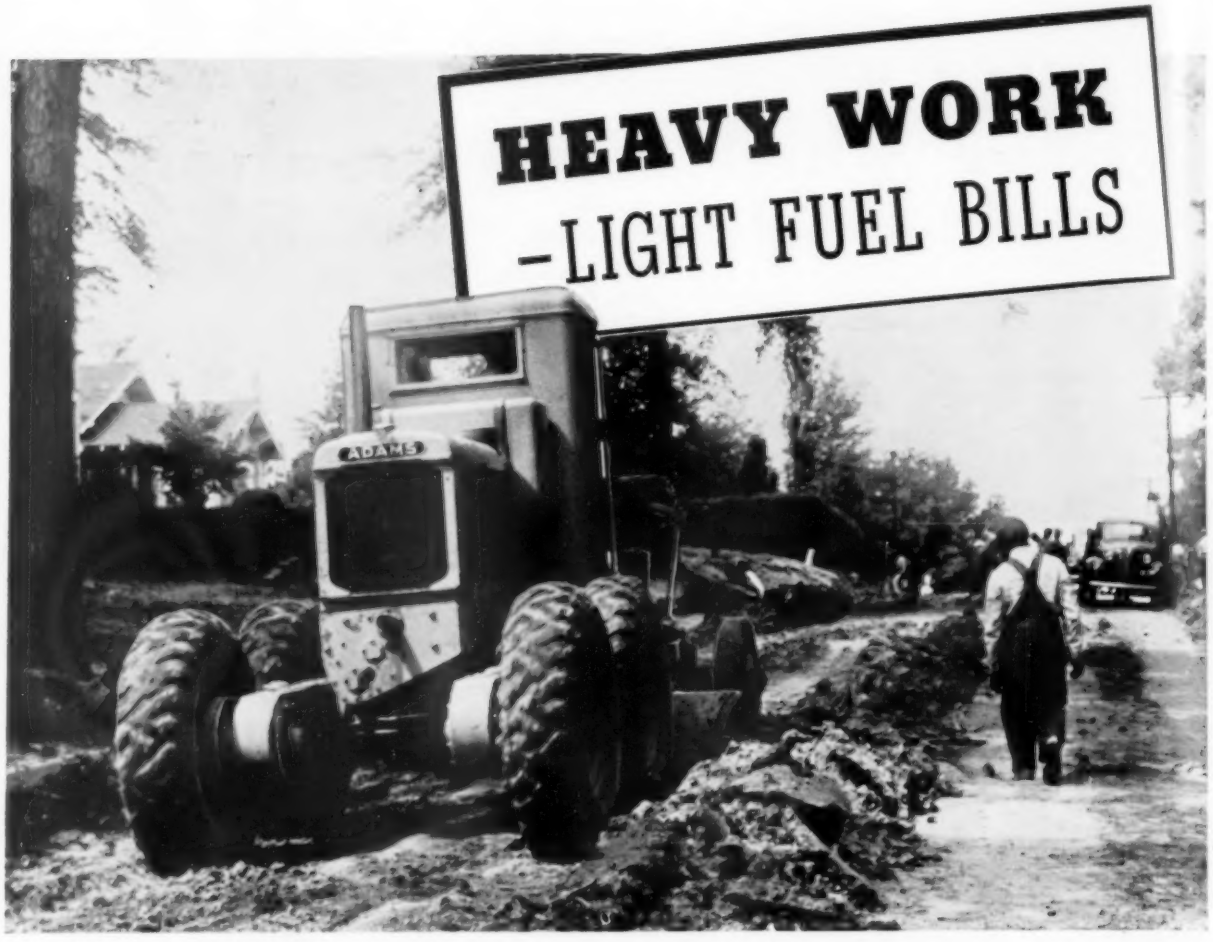
The Ice Palace as Seen from the Lake Side

While the ice palace is a thing of splendor by day with its turrets and pennants, at night it is even more gorgeous with lights which change their colors frequently, suspended in the tower and shining through the clear ice.

Hundreds of thousands of people make the trip to St. Paul and out to Como Park each year during the illumination of the ice palace. This creates a serious traffic problem, which has been solved in part by requiring traffic to move in a clockwise direction around the lake, at one end of which is the ice palace.

When the festivities have ended, the great structure, which has been facetiously referred to as "a self-liquidating project," is dynamited to prevent the possibility of accidents to youngsters who might wander into the grounds when the structure was melting.

The 1940 Ice Palace at St. Paul, Minn., Taking Shape; Showing, at Left, a Steam Crane Lifting a Skip with Ice Blocks; Center, The Front of The Palace and The Material Elevator in The Central Tower; Right, a Pilaster at the Steps Leading to the Plaza in Front of the Throne



This southern city is a typical owner of Adams Heavy-Duty Motor Graders. Their Diesel model does every conceivable kind of street and alley work — general maintenance, scarifying, new construction — and does it on only 1½ gallons of fuel per hour. Above, it is shown building a subgrade for paving on a WPA job. Says the Transportation Supt., "We have another make of grader but like the Adams best because it can do more work in the building of new streets."

Adams Heavy-Duty Motor Graders, with 66½-hp. gasoline or 62½-hp. Diesel engine, will handle the heaviest of street work. For smaller motor graders investigate the popular-priced Adams No. 303 with 45-hp. engine (pictured below).

The new Adams No. 303 with 45-hp. gasoline engine. An economical machine for all kinds of grading, scarifying and maintenance work.

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MOTOR GRADERS

J. D. ADAMS COMPANY, Indianapolis, Indiana

Gentlemen: Send me the name of your local representative and catalogs describing your ☐ Heavy-Duty, ☐ Medium-Size, ☐ Small Motor Graders.

Name .....

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When you write for that catalog, kindly mention THE AMERICAN CITY.

Concrete Pipe Line with Two Tunnels

Bethlehem, Pa., Completing New $4,000,000 Water-Supply Project

A 24-MILE pipe line is now under construction as an integral part of the $4,000,000 water-supply system for the city of Bethlehem, Pa., to serve a population of approximately 70,000.

Water will be supplied by gravity from Wild Creek in the Pocono Mountains, where a large impervious clay core dam is being built. The dam will be 135 feet high and 1,200 feet long at the crest. Storage capacity at the dam will be sufficient to supply a daily minimum of 16,000,000 gallons, with a reserve supply for 250 days. The normal capacity of the pipe line is 18,000,000 gallons per day. No booster pumps are being used, because the normal flow is considered adequate for all needs.

Expenditures for the project include $1,720,000 for the dam and clearing the reservoir; $649,000 for tunneling two miles through Blue Mountain; $1,144,000 for pipe contracts and trench excavation.

Financing for the project was provided by bonds totaling 55 per cent of the entire cost, and the remaining 45 per cent is furnished by Federal work relief grants.

The contract for reinforced concrete pipe and for pipe-line excavation was awarded to the Lock Joint Pipe Co., which erected a temporary plant at Danielsville, Pa., a point midway between the dam and the city, where the pipe is being fabricated and hauled by truck to the trenches.

The contract for steel and cast iron pipe, used only for laterals in the city, was awarded to Malone and Son, of Lancaster, Pa. The steel pipe was furnished by the Lancaster Iron Co. The steel and cast iron pipe is of the flange type, in sizes from 24-inch to 12-inch, and is covered with 3/8-inch asphalt coating.

Concrete Pipe Line

The 21 miles of Lock Joint reinforced concrete pressure pipe used for this work was made in three sizes; 24-, 30-, and 36-inch. Each pipe consisted of a substantial steel structure lined and coated with dense concrete. The steel structure consists of a welded steel cylinder surrounded by a spirally wound cage of reinforcing rods. Galvanized steel joint rings are welded to both ends of the watertight steel cylinder. The joint rings used are of the bell-and-spigot type, are self-centering when laid, and permit expansion and contraction. A rubber gasket is used as the sealing element for the 24- and 30-inch pipe, and a fiber filled lead gasket, calked from inside the pipe, is used for the 36-inch pipe. The minimum wall thickness specified for the 24- and 30-inch pipe was 3¼ inches, and for the 36-inch pipe, 3½ inches. The 24-inch pipe was made in 14-foot lengths, and the 30-inch and 36-inch pipe in 16-foot lengths. Design heads ranged from 205 feet to close to 600 feet. Manholes, air valves and blow-offs were built into the wall of the pipe and spaced along the line where necessary. Automatic air valves and air and vacuum valves were located at high and low points along the line in order to permit air to escape from the filling line and to allow air to enter while draining the line.

Northwest backhoes were used, both to excavate the ditch and to lay the pipe. Laying conditions varied from low, swampy land to rocky mountainsides where blasting was a necessary aid in excavating the trench. Throughout the line there were many highway crossings, railroad underpasses, and stream crossings. In laying the pipe along main highways, traffic interruptions were minimized. Because the type of joint used does not require external calking or couplings, the trench could be excavated, the pipe laid, and backfilled within a very short distance. In many places dump-trucks received the excavated material from the backhoe and within a few pipe lengths dropped it back into the trench as backfill material.

The Pipe Line Along the Highway, Showing Proximity of Excavation, and Backfill Around Pipe to Reduce the Distance for One-Way Traffic

In working along main highways, traffic interruptions were minimized by opening trenches for very short distances. As soon as the excavating machine had enough trench open for one section of pipe, the pipe was fitted in place, and the trench backfilled by the dump-trucks which shuttled back and forth from excavation to backfill.

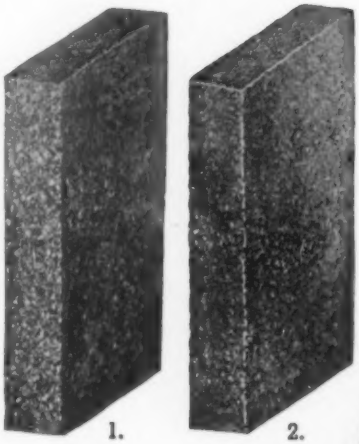
The Tunnels

In addition to the surface excavation, two tunnels are being constructed through two mountain ridges. The tunnels have lengths of 5,800 and 4,700 feet. Mucking machines are used here to a limited extent because of the rock and shale formations, and considerable blasting is necessary. Steel shoring plates are used on the tunnel roof to prevent caving-in of loose sand and rock.

A six-cylinder diesel engine furnishes the power for a heavy-duty air compressor which supplies compressed air for tools and also fur-

6 REASONS WHY SERVICISED SELF ADJUSTING JOINT SHOULD BE USED...

1. The asphalt ribs on the Self-Adjusting joint contact when the water seal is most important, nor can this compound ooze from the crevice.
2. The asphalt rib enables the product to fill the opening 100% at all times.
3. Compression intensifies resistance to inflow of moisture.
4. Recovery is aided by mechanical means ever-present and ever-functioning.
5. Uniform impregnation of the fiber with a non-sticky waterproofing material prevents adhesion of the fiber structure upon compacting.
6. Much less breakage due to handling because of reinforcement of asphalt ribs.



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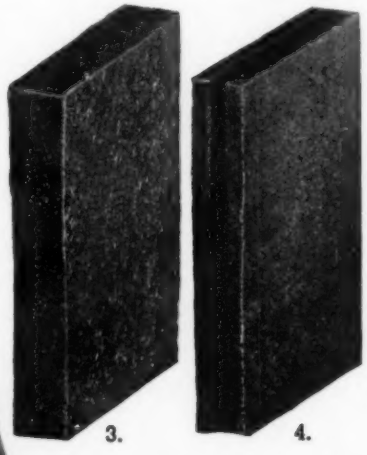


3. 4.

1. CORK RUBBER JOINT. Cork Expansion Joint is a highly resilient, non-extruding preformed joint filler consisting of particles of new live cork which are bound together with rubber. Approved by Bureau of Public Roads and specified by many State Highway Departments.

2. PLAIN CORK RESIN BOUND JOINT. Like cork rubber, it has a high degree of resiliency and meets identical physical tests and specifications with the exception that the binder for the cork particles is of synthetic resin rather than rubber.

3. FIBRE JOINT FILLER. Its uniform impregnation with a non-sticky waterproofing material prevents adhesion of the fibre structure upon compression; also has a greater degree of recovery over standard types of fibre joint.

4. SELF CONDITIONING JOINT. A pre-molded asphalt core with heavy fibre sides permitting compression and control of oozing. A substantial filler easy to handle.

MANHATTAN BRIDGE, NEW YORK CITY—125,000 square feet of SERVICISED 1" Rock Surface Plank Installed 1939. Another recent major installation—Michigan Avenue Bridge, Chicago.

SERVICISED Asphalt Plant is the finest light-weight bridge wearing surface on the market today. It can be economically laid under any climatic condition over subfloors of wood, steel or concrete. It absorbs shock and vibration, reduces noise, and is resilient at all temperatures. It is completely weatherproof and remains smooth without wearing away under the heaviest traffic conditions found in such metropolitan centers as New York and Chicago. Standard Asphalt Plank is a product of many additional uses such as waterproofing protection course for underpasses and tunnels, wearing surface for roof decks, and industrial flooring.

Rock Surfaced Plank formed by imbedding particles of granite into Standard Plank under great pressure so that the planking material completely surrounds and locks the granite into the surface. This is primarily a bridge wearing surface with a high safety factor.

SERVICISED QUALITY PRODUCTS

SERVICISED PRODUCTS CORPORATION

6051 West 65th Street **Chicago, Illinois**

nishes a constant flow of air into the tunnel.

Excavation from the tunnel is loaded on small cars, manually operated on a narrow-gage track, and brought to the tunnel portal, about 30 feet below the surface, where they are dumped. Here a crane on the surface drops a clam-shell bucket into the pit and picks up the rock and dirt.

In obtaining approximately 24 miles of right-of-way, about 75 per cent of the line is located on city streets or county highways, it being necessary to purchase only 25 per cent of the rights-of-way.

The commission which has charge of the design and construction of the water line and dam is the Bethlehem Municipal Water Authority, whose members are also members of the City Council.

The executive engineer in charge is R. L. Fox, City Engineer, with Leonard M. Fraivillig as principal assistant.

"Municipal Government by Postcard"

MONTCLAIR, N. J., one of the wealthier suburban communities of the New York metropolitan region, has witnessed installation of a central purchasing system and town-owned garbage trucks among other measures calculated to save taxpayers' money in the last four years. One of the most interesting innovations, however, from the point of view of democracy at work, has been the experiment in "government by postcard."

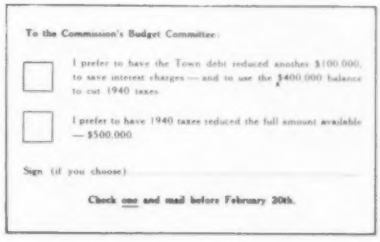
The Town Commission's budget committee, composed of Mayor William E. Speers and Commissioner of Revenue and Finance Bayard H. Faulkner, mailed out a questionnaire on February 12 to 9,000 of the town's taxpayers. It asked whether Montclair should reduce its 1940 budget by $500,000 or use $100,000 of that amount to retire debt. Accompanying the explanatory letter was a postcard ballot, addressed to the budget committee.

The letter explained that it appeared that the 1940 tax levy would be the lowest in 13 years, or $3,243,000, a decrease of $500,000 from 1939 and $746,000 below the 1938 figure. High tax collections, larger surpluses and decreased appropriations have been responsible, it stated. The letter also said:

> We think you'll also be glad to learn that Montclair's financial condition is excellent. The town has no bank debt. Cash on hand is $535,000 more than it was four years ago. And, after largely completing a major program of repairing and rehabilitating badly run-down street pavements, sewers, buildings and water supply, Montclair has, since January 1, 1936, reduced its total debt by $1,685,000.

On February 26 Commissioner Faulkner announced that Montclair residents had voted 2 to 1 to apply $100,000 of the possible $500,000 reduction in the 1940 tax levy to retirement of town debt. The proposed tax rate will be $4.02 as against the 1939 rate of $4.11.

It should be understood that the $500,000 is not a surplus, as *Time* and some of the newspapers indicated. The $500,000 could perhaps best be described as an amount "available for lowering taxes." Spending $100,000 of this reduction for debt retirement merely raises the levy for 1940 and adds to the tax rate. The approved plan is to retire $100,000 in bond anticipation


To the Commission's Budget Committee:

☐ I prefer to have the Town debt reduced another $100,000, to save interest charges — and to use the $400,000 balance to cut 1940 taxes.

☐ I prefer to have 1940 taxes reduced the full amount available — $500,000.

Sign (if you choose)

Check one and mail before February 20th.

notes which otherwise would be converted into short- and long-term bonds. Commissioner Faulkner has estimated the procedure will save taxpayers $25,000 to $30,000 in interest.

The questionnaire method was used for the first time in Montclair last year by the Commission majority after the Citizens' Budget Research Group demanded that appropriations be cut $48,000. At that time 9,000 questionnaires, asking whether five town services should be curtailed and tennis court fees increased, were mailed to taxpayers. Of the 2,158 who answered, a majority voted in favor of reducing library and refuse-collection services; against reducing health, street-lighting and street-cleaning services; and in favor of increasing tennis court fees. In its action on the budget the Town Commission was guided partly but not wholly by the postcard vote.

DAMON STETSON.

LOOK BEHIND YOU, MR. PUBLIC!

Drawing by Paule Loring. Reproduced by courtesy of The Evening Bulletin, Providence, R. I., and of Public Safety

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I've been in the paving business more than forty years, and have used just about every kind of paving material known to man. But I always rely on Trinidad.

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And here's the proof: A lot of the Trinidad pavements I laid down when I first started in this business are still giving good service. They were *right* in the horse-and-buggy days, and they're *right* today. If you're interested in low-cost-per-square-yard-per-year paving, take the advice of an old-timer —use Trinidad every time!

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Bridgeport, Conn., Police Department

Kicks Crime for a Goal

NO one making a tour of police headquarters at Bridgeport, Conn., could fail to be impressed by the actually homelike atmosphere. The personal offices of the bureau chiefs have pleasing touches, such as a pot or two of flowers. The office of Superintendent Charles A. Wheeler is at the end of a vista of four doorless adjoining rooms which give the superficial impression of a suite of drawing rooms. The Superintendent's private office also is homelike. The desk at the farther end, just in front of a large American flag, is older than the chief's service of 40 years. Along the front of it are photographs of former chiefs of Bridgeport's Police Department.

Superintendent Wheeler very courteously gave three hours of his time to describing methods and results. Mayor Jasper McLevy was present throughout, yet he spoke only twice.

Once he said: "How many burglaries are we having?"

Superintendent Wheeler replied: "35 to 40 per month; we used to have 75 to 80."

Another time the Mayor said: "How many murders are we having?"

Superintendent Wheeler replied: "We're almost afraid to answer that question—there has been no murder in five years; we once had seven in seven weeks."

Even pickpockets have about given up. When, for instance, there is to be a parade, it is led by the Voice of Safety car whose stentorian loudspeaker warns "Beware of pickpockets!" What citizen will not clutch his roll, if any, after that, and what pickpocket will have the gall to operate?

Why Crime Dropped

It would be most encouraging to all mayors, councilmen, commissioners and city managers if a wholly material reason could be given for the remarkable drop in crime that has come to Bridgeport. Pleasant indeed if municipal officials could say: "Let us also reduce crime. All we need do is to intensify our coverage of police radio, buy a well-equipped rescue truck and an accident-prevention truck, retain our Gamewell police signal system to keep foot patrolmen on the job, have a well-maintained traffic-signal system, decide to install parking meters, have a working system of police records. These will reduce crime."

Makes traffic officer visible at night

They will—if there is back of the machines the steady hands and alert minds of officers who know they have a leader with a will to achieve intelligently. If there is any politics in the Bridgeport Police Department, it is not visible to the lay eye. This is given as the reason for the drop in crime in the city. There are no organized gangs, no organized gambling, no organized prostitution, and, as Mayor McLevy sums up, "no organized protection."

Communications

In a free municipality, as differing from a boss,- gang- or party-ridden town, the matter of modern police equipment at once assumes its rightfully dominating place. In this age of speed, the test of success is more speed. The Bridgeport Police Department was the first in New England to install police radio. The system is still one-way, and while two-way is needed and will be installed after what appear to be greater needs (such as the sewage-treatment system) have been satisfied, the radio service is aided by the city's 30,000 telephones, and strengthened by the

The 22 foot-patrolmen always on beat make five calls each from 127 police boxes, daily

In addition to traffic signals where needed, eight important intersections in Bridgeport are equipped with police-radio receivers audible at 12 feet, so that the officer at the intersection can be kept informed on the doings in the city in the control of which he may become a factor

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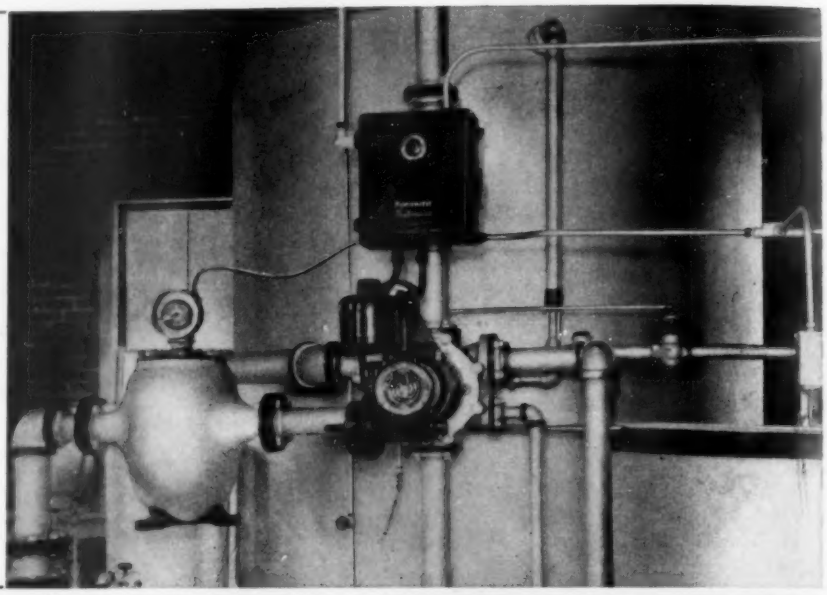

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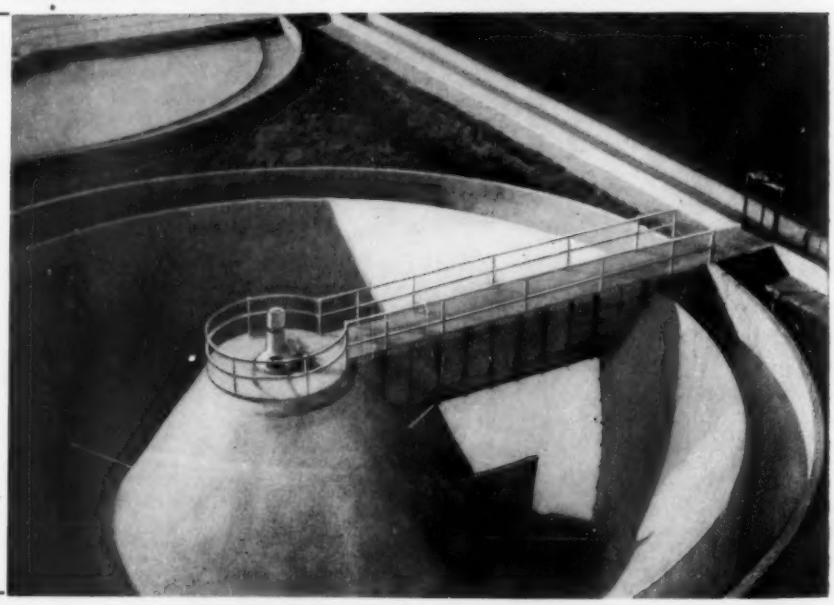
A new, improved cold lime process that takes less space, less time, less chemicals. Furnishes a clear, sparkling, soft water, so stable that further treatment is usually unnecessary. Units already installed in scores of cities range in capacity from 5000 to 8,000,000 gallons per day. In some cases antiquated chemical treatment plants can be converted into a Spaulding Precipitator.



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numerous receivers. Receivers are installed not only on 7 scout cars, 4 detective cars, and 4 motorcycles, but also at 45 additional stationary points.

Eight intersections are equipped with Western Electric police radio receivers audible at 12 feet. Every day something worth while is achieved by the presence of these receivers or "notifiers." When there is a strike, for instance, instead of sending too many policemen to the plant in trouble and encouraging the gathering of a crowd, motorcycle officers are stationed near the radio boxes at the key intersections and in case of a prearranged signal go at once to the plant. When there have been holdups in a certain area, the motorcycle officers again place themselves within hearing of the radio boxes, and if there is a call they converge quietly and rather slowly on the scene. Any or all of the eight motorcycles without radio receivers on them are used for these purposes. The four radio-equipped Harley-Davidsons can of course be directed from any location.

In addition to the mobile receivers and those at the intersections, there are receivers on the six city-owned and one state-owned drawbridge over the Pequonnock River. Through the cooperation of the Superintendent of Bridges, the bridge attendants watch for the cars publicized by the police radio.

All A. D. T. burglar alarms register in police headquarters, and the police encourage the installation of alarms. One of the reasons why burglaries have decreased is that filling stations, restaurants, Saturday night paid dances and entertainments, amusement parks and lunch stands must take their money either to the night depositories of banks or to police headquarters, where sometimes there is as much as $100,000 stored. The result is that safes are hardly worth cracking. Two recent adventures grossed $8 in one case and $25 in the other. When burglary pins begin to pile up at any location on the spot map in the Superintendent's office, the captain of the precinct is called in for a talk. The public is encouraged to telephone the police when there is the slightest suspicion of something possibly amiss, even to the clatter of a garbage-can lid. Far from bawling out the citizen for making a fool call, the policeman thanks him or her for the cooperation.

The Gamewell signal system, installed 38 years ago, continues to operate through its 127 boxes. There are 66 foot patrolmen, 22 per shift, in the First District, 36 in the Second District, and 18 in the West End. Thus there are 40 officers on beat in the city all the time. Each makes five box calls per shift, or a total of 200 calls per day.

There are four police trucks. The Reo truck carries a Homelite generator, four G. E. 1,500-watt floodlights, an Andrew J. Morse underwater lamp, and an H-H inhalator. There are two Dodge trucks for accident prevention and service for the traffic signals at 68 intersections. Finally, there is a Reo patrol wagon with a wire sliding door to separate the officer from the passengers.

Police Records

Records are maintained in a number of offices at police headquarters. Art Metal cabinets house the records of 300,000 arrests. The detective bureau has records of 6,000 investigations. One of the most interesting records, devised and maintained to date by Sergeant J. A. Morris, answers such frequent questions as these: "What was that crime at Gilbert and Main Streets? Who were concerned in that crime? What happened in that case?" The files are kept first by precincts, then by business establishments or dwellings, then by type of crime. Under each of these divisions, the crimes of a year begin with No. 1. Then are tabulated the case, date, address, place, manner of entrance in burglary, loss, articles taken, whether the perpetrator was adult or juvenile, name of person arrested.

The Men

During the last 4½ years, 42 rookies have entered the Department by way of the Civil Service Commission. The top man on the civil service list is selected, regardless of race, color or creed. Of the 268 policemen on the force (265 three years ago), 16 are assigned to the accident-prevention service, three shifts, 20 to traffic control, 8 A.M. to 6 P.M. Traffic, by the way, though severe, has been greatly relieved by the new Merritt Parkway, which diverted 20,000 of the 24,000 cars which formerly passed daily east and west through this city originally laid out for north-south travel. Another aid, especially to real-estate values, was the paving of Railroad Avenue and the consequent deflection of 1,500 trucks per day from the residential district. A large waste space at headquarters has been turned into a gymnasium in charge of Andrew Parker, former lightweight champion boxer of New England, who says that there has been much less sickness and absence while he has been on the job, fewer adverse decisions for the officers too.

White Shirts That Sparkle

By day the policemen on traffic posts look much like the officers of other cities. By night, they gleam with Reflecto Safety Coats designed by Superintendent Wheeler and sold (to an increasing number of cities) by The Reflecto Safety Coat Co., Bridgeport. This sleeveless coat shirt is made in only one size for wearing over jacket or overcoat. It has 44 reflector buttons set in shields in front and back and on the arms, and must be seen to be appreciated.

Efficient as is the equipment of the Police Department, Mayor Jasper McLevy likes best the falling crime record. "After all," he says, "that's what a police department is for."

400 Oil-Electric Buses in One Fleet

Public Service Coordinated Transport, Newark, N. J., has purchased from the General Motors Truck and Coach Co., 134 oil buses with electric drive by General Electric Co. Its own shops are converting 100 gas-electric buses to oil-electric type, with which the operator controls the bus by merely pressing the foot pedal without shifting clutch or gears. The bodies are aluminum and steel, and the features include modernistic dome lighting and velour upholstered seats. The first oil-electric buses were installed by this transit company in January, 1937.

Drawn by Dean Cornwell. Copyright 1940, U. S. Pipe & Foundry Co.

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The "Magic City" of Paisley

By JOHN E. SLOANE
Vice-Chairman
New Jersey State Planning Board

These are excerpts from a series of articles pointing out the grave economic evil of premature subdivisions of land in New Jersey municipalities. Information for the articles was obtained through New Jersey State Planning Board surveys and analytical studies carried on under the direction of Dr. Alvin T. M. Lee, Agricultural Economist of the Bureau of Agricultural Economics, U. S. Department of Agriculture. The articles were released to the newspapers in January and February.

"PAISLEY—the Magic City . . . the city of marvelous growth that has sprung from nothing into a place of 2,000 owners in a few weeks and is now favorably known from Maine to Constantinople."

This advertisement and others of a similar nature were familiar to newspaper readers in the 1880's. More a dream city," or an imaginary one, than a "magic city," Paisley was located in the heart of New Jersey's pine barrens in the southern part of the state.

Similar "Paisleys" exist in a number of locations throughout New Jersey. Promoted solely as wild schemes of land speculation by real estate high-pressure artists, these artificial subdivisions have robbed many unwary investors of their life savings and are now helping to bankrupt a number of local governments.

A brief history of Paisley presents a good example of one type of surplus land subdivision.

The Boom

A real estate promoter from the state of New York bought 1,400 acres of New Jersey pine land for $3.67 an acre in 1888. The total cost of this extensive tract was $5,146. The entire area was surveyed, lots were staked out, and thus the foundation was laid for Paisley, "the Magic City."

Nearly 90 per cent of this land was too sandy and infertile for agricultural purposes or even for maintaining decent lawns and gardens. About 6 per cent of the area was composed of low, swampy lands adapted only to the growing of cranberries.

Advertised as "the finest farming land in central New Jersey," out of this practically barren waste more than 10,000 lots and more than 200 additional acres in farm plots were sold to 3,122 known purchasers. The average cost per lot to those purchasers was $22.33, which represents about $375 an acre, compared with the $3.67 an acre which was paid by the promoter. It is estimated that the promoter sold Paisley lots and farm products for a gross of at least $250,000.

The Victims

Surveys on this subject disclose there have been at least 400 land development schemes in the New Jersey Pines alone, and that more than 200,000 acres have been involved. More than 1,000,000 individuals have been directly affected and each year hundreds more are added to the list.

As in the case of Paisley, most of these unsound subdivision schemes follow the same formula. Many acres of land are bought at low prices, subdivision, mostly on paper, takes place, and then building sites or small farm plots are sold at prices approaching urban land value. Purchasers are generally completely uninformed as to the actual value of the land for agricultural or any other use. Their purchase is based almost entirely upon promises of glowing possibilities for the future extended by the promoter.

Actually, of course, the alleged increase of land value never occurs. The promised building programs and civic improvements indicated by the promoter's extensive advertising campaign are simply forgotten. In Paisley, for example, in spite of the promise of fine business blocks, sanitariums, hospitals and other civic improvements, life was never anything but primitive. The few persons who actually came to Paisley, never more than a handful, had few, if any, modern conveniences.

Water was obtained from individual wells. Electricity was not available until 1932, at which time Paisley had only one resident. There were no school facilities, no telephone service and no improved roads. But of far greater economic importance than the loss of investment to the thousands who buy lots in these land-promotion developments is the tremendous financial burden imposed on the various local municipalities.

Most of the land which has been subdivided artificially has become tax-delinquent almost immediately. Yet even though taxes on this land prove to be uncollectible, the local municipality, according to law in New Jersey, is required to pay taxes to the county and state on all assessments within its limits. In other words, these local government units are forced to pay taxes on land which provides no income.

The Remedy

Widespread suffering is the proven result of wild land schemes. Since the promoter derives the only benefits, all of which are at the expense of society, the continued existence of this evil should be condemned. But although there may be general agreement that unsound subdivision plans should not be tolerated, final solution of the problem requires the passage and application of laws protecting both purchaser of land and government interests.

Some laws already exist which, if properly administered, would aid in solving this problem. Probably the most adaptable [in New Jersey] are the Municipal Planning Enabling Act, passed in 1930, and the County Planning Enabling Act, passed in 1935. These laws provide that the respective governmental units may appoint planning boards and empower them to regulate land-subdivision activities and approve land-subdivision plats.

These acts are set forth and explained in a publication of the New Jersey State Planning Board titled, "Municipal and County Planning Legislation and Procedures in New Jersey." A specific and comprehensive state land policy is necessary before a complete solution can be discovered to such a problem as in the Pine Lands.

A large proportion of land in this area and to a lesser degree in various areas in other sections of New Jersey will never be suitable for productive private use. The answer obviously seems to be to transfer much of this land to public ownership. The state can use these tracts profitably for purposes of recreation, soil conservation, watershed protection, wild-life conservation and timber production.

It is important, of course, if such a policy is to be followed by the state, that these tracts of poorer land be obtained at a minimum cost, proportionate to their true economic value. Legislation is necessary which will prevent individuals from carrying on wild land promotion schemes, thus eliminating the problem of excessive purchase price.

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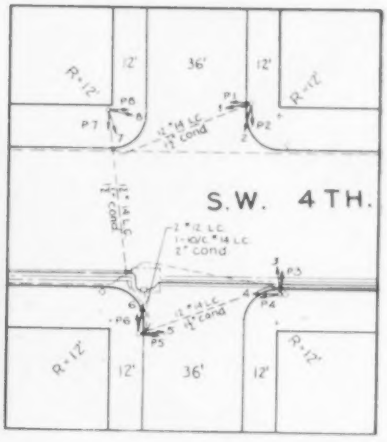
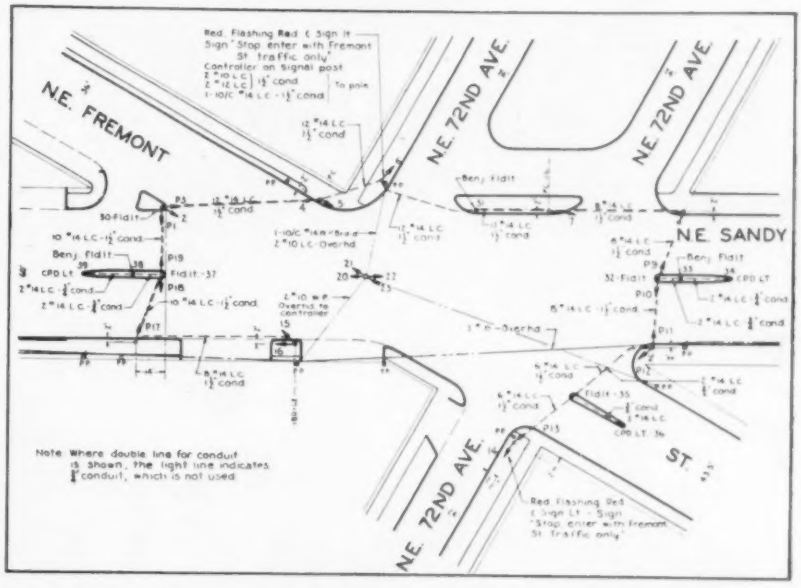
Austin-Western

During March we hope you will remember to mention THE AMERICAN CITY.

Forty Traffic-Signal Lenses at Each Intersection

By WILLIAM A. BOWES
Commissioner of Public Works, Portland, Ore.

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Note: Where double line for conduit is shown, the light line indicates ½" conduit, which is not used.

Top, Left, Type of Traffic Signal, Portland, Ore., and, at Right, One of the Simple Intersections on S.W. Fourth Avenue. Below, One of a Number of Complex Intersections in the Progressive-Signal System on N.E. Sandy Boulevard

THE central business streets of Portland are being equipped with modern traffic signals, including progressive operation, to take the place of an obsolete traffic signal system installed a number of years ago.

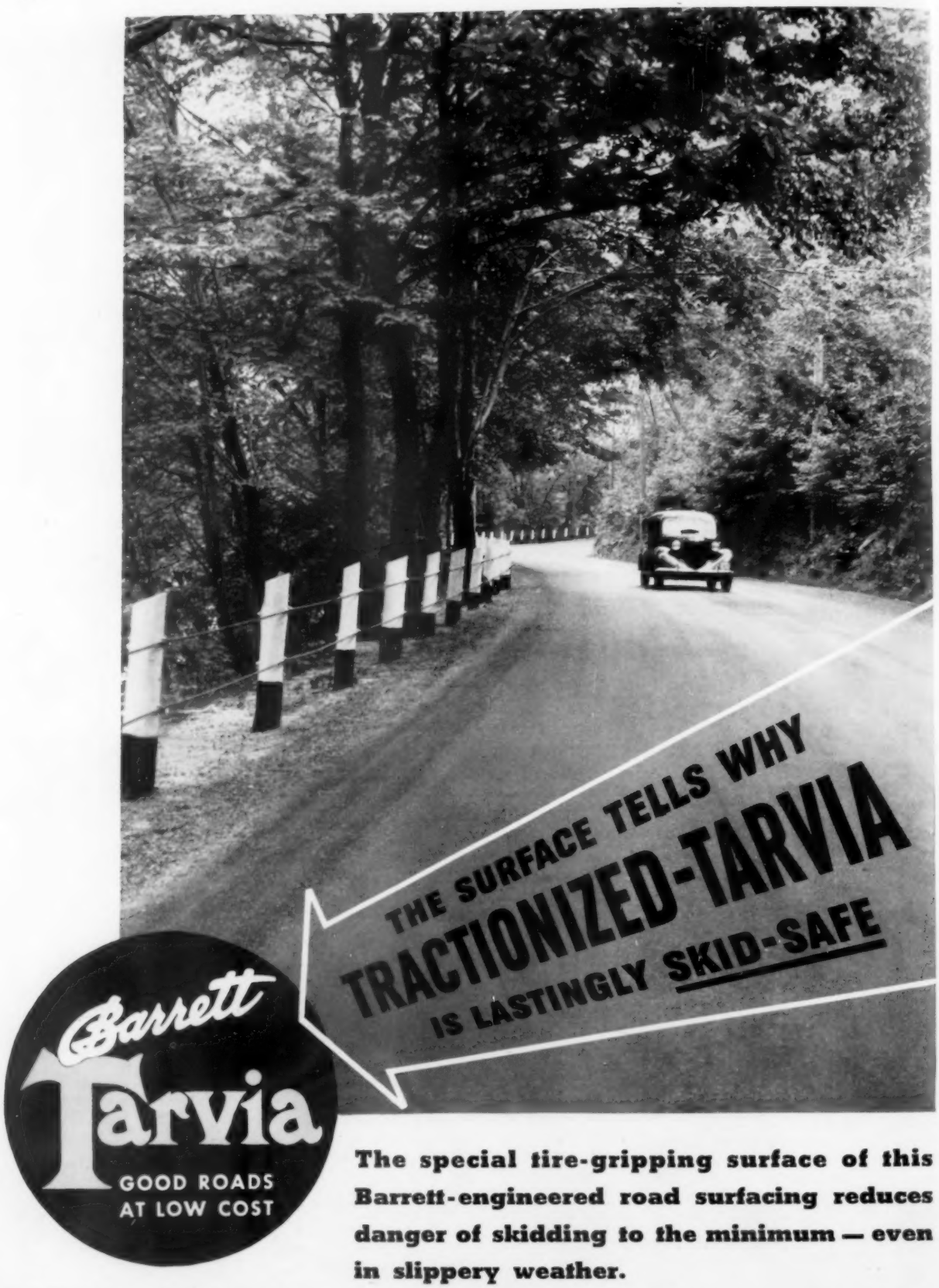
The first element of the new system covers a progressive signal system at fifteen intersections on N.E. Sandy Boulevard, recently completed. The second element of the new system covers nineteen intersections: eleven intersections on S.W. Fourth Avenue, four on S.W. Morrison Street, and four on S.W. Madison Street. This installation will be continued to cover an additional fifteen intersections.

Both the signal heads and the controllers used in the Fourth Avenue installation are furnished by the Eagle Signal Corporation of Moline, Ill. These signals involve the use of red, amber and green lights and also pedestrian WALK and WAIT signals on the far right-hand side of the intersection, with the signal faces set at a 90-degree angle. This involves the use of 40 separate signal lenses for each intersection. The signals are controlled by an induction-type local controller, which is in turn controlled by a synchronous motor-driven master controller. The master controller is of the latest type developed by the Eagle Signal Corporation and is capable of controlling all the signals which may in the future be installed in the central business area of the city. All blocks in the area where the signals are installed are 200 feet long, and the cross streets on S.W. Fourth Avenue are all 60 feet wide, making the intersections 260 feet from center to center. This of course involves a serious problem of timing of signals to obtain progression of traffic.

Heavy pedestrian movements on five of the intersections have caused us to adopt a special plan for operating the signals. The plan involves a four-period cycle set up in the following manner: period No. 1, pedestrians in all directions; period No. 2, north-and-south vehicular traffic; period No. 3, pedestrians in all directions; period No. 4, east-and-west vehicular traffic. This setting is of course entirely experimental, and we are as yet unable to give any information in regard to its effectiveness in handling the traffic. Our controllers are of such a flexible nature, however, that changes can readily be made to obtain the necessary control of the traffic. If this plan works out, it will be continued in the downtown business area.

S.W. Fourth Avenue is a continuation of U. S. Highway No. 99W, entering the city of Portland from the south on the west side of the Willamette River. The opening up of this highway has increased the traffic entering S.W. Fourth Avenue to a point where the resulting confusion has necessitated some form of traffic-signal control.

S.W. Morrison and S.W. Madison Streets are approaches from the main business area to the Morrison and Hawthorne Bridges across the Willamette River. The Morrison Bridge handles approximately 19,530 vehicles per day, and the Hawthorne Bridge handles 25,969 vehicles per day, from the east-side residential area to the



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When you write for that catalog, kindly mention THE AMERICAN CITY.

west-side business area. This installation went into operation in January.

The installation of traffic signals on N.E. Sandy Boulevard extends from N.E. 16th Avenue to N.E. 82d Avenue and involves the signalization of eighteen intersections. N.E. Sandy Boulevard is a major through street running diagonally northeast and southwest through the east side of the city, connecting directly to the Burnside Bridge, which is a main highway bridge across the Willamette River. The installation provides for a progressive flow of traffic on this street and thereby regulates the speed of the traffic and provides an interval when traffic is able to cross Sandy Boulevard in safety. The installation of these signals is divided into two separate groups, one of ten intersections controlled by induction-type individual controllers and an induction master controller with special arrangements to increase the time for traffic movement on N.E. Sandy Boulevard in the evening and morning peak traffic periods. Traffic counts indicated that beyond N.E. 42d Avenue this increase in timing was not necessary, and an eight-intersection installation was made at five-block intervals between N.E. 42d Avenue and N.E. 82d Avenue controlled by synchronous-motor-driven controllers without any master controller. The timing motors on these signals are all set from one power supply and operate continuously, thereby keeping the signals in perfect progression. A total cycle of 65 seconds on this portion of the system gives a speed of 30 miles per hour through this entire system in each direction.

The rest of the system between N.E. 16th Avenue and N.E. 42d Avenue is operated on a midday cycle of 60 seconds, which in general gives a speed of 28 miles per hour through the greater portion of the system. Owing to the uneven spacing of some of the signals, it is impossible to obtain perfect progression in both directions. However, we have obtained this progression in the easterly direction to care for the peak flow of traffic in the evening, which is the heaviest, since it occurs over a shorter period of time. By the use of resistances we are able to slow the operation of the signals and add about 10 seconds to the main time given to the main traffic flow on N.E. Sandy Boulevard during the peak morning and evening traffic rushes. The amount of time can be varied to suit the condtions.

This traffic signal installation has been very satisfactory in handling the traffic, and we have had general approval by the people on the street and the motorists using the street. It has also improved the conditions so far as the pedestrians are concerned, and we look for a much safer street from an accident standpoint. We have adopted an auxiliary overhead signal in addition to the regular post-type signals on all the major traffic arteries.

These installations are being made jointly by the city of Portland and the Oregon State Highway Commission, and the costs are being paid on a 50-50 basis. We have made moving pictures of the installation which show quite clearly the operation of the signals.

Big Step Toward Complete Machine Accounting

By HARRY R. ATKINSON
City Treasurer, Battle Creek, Mich.

IN the spring of 1938, a Burroughs tax billing and tax accounting machine was installed in our office. Previous to this time, all tax bills had been prepared by hand. Each property description, the valuation, and the distribution of the tax, had been laboriously written-in manually.

It is not necessary to point out the defects of such a system. Property descriptions were erroneously copied, resulting many times in rejected taxes on the part of the State Auditor General. Each tax item had to be checked to insure the correct billing of each property. When 15,000 descriptions were involved twice each year, the task of checking the various items on each bill was tremendous. With the old system it was possible, then, to place one set of figures on the cashier's stubs and a different set on the bill.

Since 1938, an entirely different tax bill has been used. The bill consists of an office copy and the taxpayer's copy. The bills are first run through the Elliott addressing machine, which prints the property descriptions on the bills. The office copy is carbon-spotted so that the billing machine prints valuation and tax figures on both copies of the bill with one set of operations. The machine has eight registers. It not only adds the total of all items on each bill, but accumulates the totals of the various items. In other words, when the billing of the 15,000 descriptions is completed, the machine is "cleared," which gives the grand total of valuation, debt service, operating expense and special assessments.

The total valuation and the total of the other items are predetermined. In this way, the totals as given by the machine are checked. The public is now given a better-looking bill and receipt. The work is done accurately. The tax office has a copy of each tax bill for its files. The job is businesslike.

As soon as the City Commission sees its way clear to give one more machine to the Treasurer's Office, the plan is to do away with the cumbersome tax rolls, and a unit tax ledger system will be installed. In fact, the tax bills, as they stand today, are designed to fit into the proposed system. A ledger card will be made for each property description. At the time of each tax period the tax ledger card and the tax bill will be put through the machine in one operation. All the information that appears in the bill will be printed on the ledger card, together with all delinquent taxes. When collections are made, the cash will be posted by the machine on the unit ledger cards, which will give a control over the daily receipts and daily postings. The complete tax accounting system will be installed when we have two billing machines.

The public appreciates very much the advances being made in the accounting of the tax dollar. The business men of the city are especially interested in the changes made during the past two years.

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PATENTED PARKING METER FEATURES

IN hand meters, rewinding and resetting to exact initial position upon simple turn of handle.

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DISTINCTIVE and separate timing dials and signals in both types of meters for indicating the allotted parking period and the overtime period.

A SIGNAL showing throughout the resetting operation in the hand meter.

IN both types of meters, a signal for positively showing the expiration of parking time and provision for a prescribed amount of overtime operation.

INTERNAL expansion clamp holding meter housing onto hollow supporting post against turning.

These various features of metered parking are covered by U. S. Letters Patent as follows:

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Any unlicensed use of these features will be considered as an unlawful infringement of patent rights and the user duly prosecuted.

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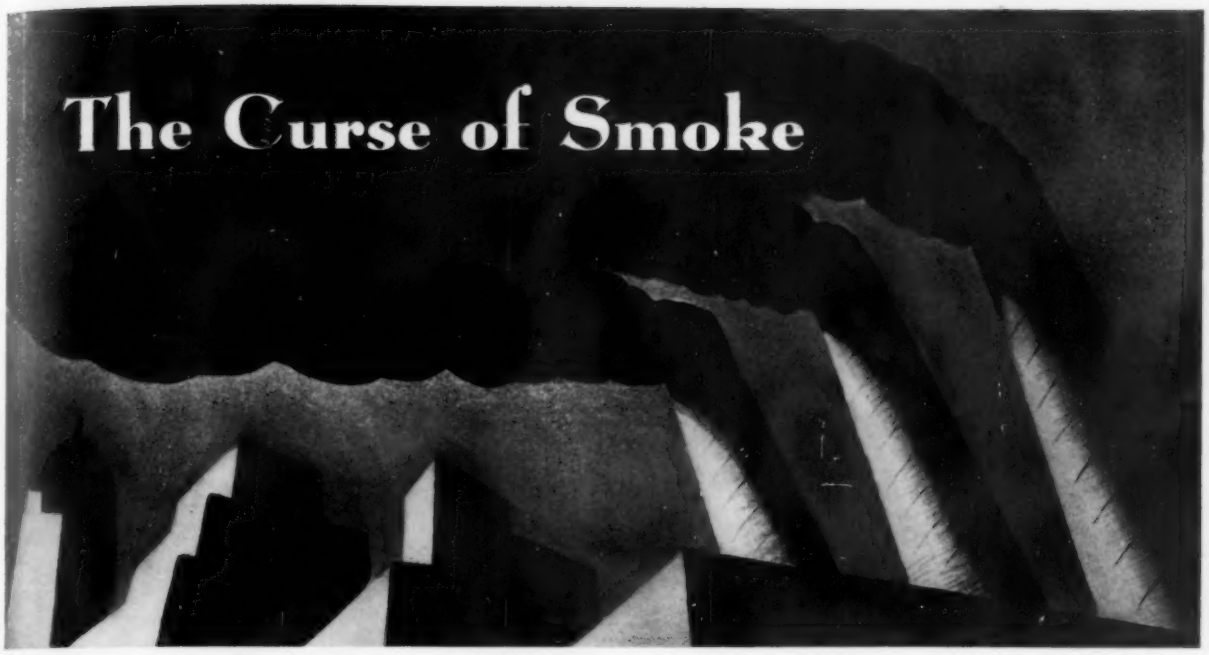
The Curse of Smoke



Smoke Endangers Health, Weakens Buildings, Harms Plants and Trees, Injures Real Estate—How Are Cities Combating It?

UNDER the heading of public nuisances in American industrial cities and their neighboring towns and villages, is a major health problem—the almost perpetual emission of smoke, soot, fly ash, and fumes from thousands of great stacks of factories and inconspicuous chimneys of one-family houses.

When we realize that the accumulation of this waste from the stacks eventually becomes part of the air we all breathe, the problem of atmospheric pollution is recognized as a vital one to the residents and taxpayers of every city and town. Although credited as symbolic of economic progress and prosperity, smoke injures health, weakens buildings and other structures, and destroys valuable trees, gardens, and other vegetation.

Smoke vs. Health

In the city of Pittsburgh a group of scientists studied the relation of the city's heavy smoke blanket and fog to the high pneumonia death rate. They found that during the winter months these periods of smog (smoke and fog) were commonly followed after a few days by an increased number of deaths from pneumonia.

During the depression, when most of the Pennsylvania factories and mines were shut down, so reducing the emission of smoke, the pneumonia death rate dropped to a low of 91.8 per 100,000 population in 1933. With the return of better times and the reopening of industrial plants, and the ensuing increase in smoke, soot, and fly ash, the death rate from pneumonia jumped from the previous low in 1933, to 167.4 per 100,000 population in 1936. The conclusion of course is obvious: an increase in the amount of smoke production results in a proportionate increase in respiratory diseases.

More serious is the effect of the smoke blanket over cities on the health of growing children. It is a fact that industrial smoke- and soot-laden sections of our cities produce stunted, unhealthy children. In some factory areas only one-half of the available sunshine reaches street level. In the city of New York, according to Obermeyer's "Stop that Smoke," a layer of air 200 feet above the streets contains 1,780 tons of dust and smoke. Isn't it a pity that the health of children should be sacrificed to a belief that smoke is unavoidable?

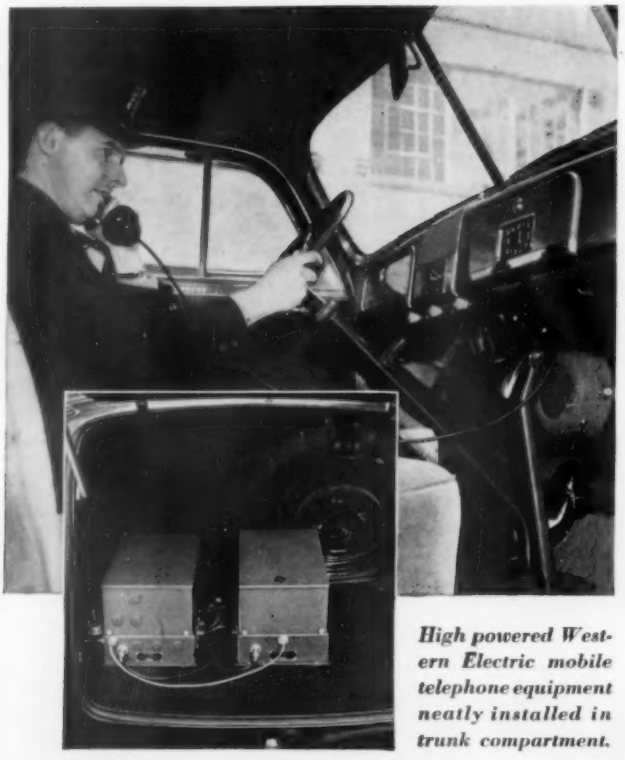
Smoke vs. Buildings

The effect of smoke on buildings and structures also involves great financial losses. For example, the new Supreme Court Building in Washington, D. C., constructed of the finest marble, suffers from a smoke nuisance originating from a nearby church. The cost of scrubbing and scouring this multi-million-dollar structure runs into thousands of dollars each year. In New York City, skyscrapers have to be sandblasted to remove the imbedded grime and soot. Although these surfaces can be cleaned, the structure is materially weakened after each blasting. Acids from smoke eat into stone, brick, and stucco, undermining the strength of the edifice. The well-known Cleopatra's Needle in New York City was so badly smudged that the hieroglyphics had to be recut to make them visible.

Other Losses

The products of smoke attack every green thing in the cities, from

NEW Longer range Police Radio Telephone



High powered Western Electric mobile telephone equipment neatly installed in trunk compartment.

Western Electric 228A equipment offers clearer 2-way 'phone service even in areas of high electrical interference

Now your force can enjoy fine telephone service between patrol cars and headquarters. The 228A equipment is low in initial cost—low in operating cost.

The car transmitter (100% modulated) is *three* times as powerful as before, and its antenna tuning circuit delivers full transmitter power to the aerial.

Both headquarters and mobile receivers are high output superhets—with codan circuit—new noise suppression circuit—quartz crystal frequency control optional.

For full details, write Graybar Electric Co., Graybar Building, New York, N. Y.

Western Electric Police Radio is giving added protection to 45,000,000 people.

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POLICE RADIO TELEPHONE EQUIPMENT

parks to penthouse gardens. The constant deposit of acids on plants eats away tender leaves and flowers. The chemical qualities of the acid in smoke seep into the soil and prevent the growth of sturdy, healthy plants. Such is the problem that confronts lovers of gardens, even hundreds of feet up in the air where city dwellers have limited space for a few plants and flowers.

One of the most important losses due to smoke is the depreciation of real estate values resulting from the abandonment of properties in smoke-laden areas of a city. When tenants threaten to move, and oftentimes do, then the real estate operator realizes the utter necessity of curbing the smoke nuisance. Empty apartments are left smeared and smudged with soot. New York City large property owners have banded together to secure regulation of furnaces and boilers. Faulty equipment will produce smoke and plenty of it.

What Causes Smoke?

Just what are the causes of smoke? Basically, poor mixture of oxygen, and incorrect temperature in the furnace or other fuel-burning equipment. When the proper amounts of each are present, there should be little smoke. When smoke comes out of the chimney, it is the result of the volatilization of the hydrocarbons, or the liberation of carbons that have not been consumed owing to the incorrect admixture of ingredients. When this occurs, the assumption is either that poor fuel is used in a defective furnace, or that the operating engineer is lax in his work. No matter how perfect a piece of heating equipment may be, it is essential that the person who fires the apparatus should be familiar with his job. If he is a really good fireman, he can save his employer quite a sum on coal bills, because smoke is waste, and by careful methods of stoking or operation a great deal of coal or oil can be saved.

While much of the blame for the smoke nuisance in cities is usually charged against the industrial plants and other structures using thousands of tons of coal each year, or a corresponding amount of oil, much of the fault rests with the small residences where handfired equipment is employed.

Where the industrial plants are concerned, the present trend is toward the installation of various types of stokers—the underfeed, the overfeed, and the chain grate, all mechanically operated and worthy. Engineers have found the mechanical stoker to be most successful in eliminating bad smoke conditions. The best sign of all in the fight to get rid of smoke is that industrial leaders have showed willingness to cooperate with the authorities of the various cities.

In order that careful checks may be kept on the smoke situation in these cities, municipal authorities have established smoke abatement bureaus, usually supervised by a mechanical engineer well acquainted with furnace and boiler design. Preeminent among the leaders of all these Bureaus is Dr. H. B. Meller, Chief of the Pittsburgh Bureau of Smoke Regulation under the Department of Public Health. Because the type of equipment installed may later become the source of a bad smoke condition, the practice in Pittsburgh, as well as in most American cities, is to have strict regulations as to the type and kind of fuel-burning equipment put into a plant.

In addition to the Pittsburgh Bureau of Smoke Regulation, there is an Advisory Board appointed by the Mayor of the city to act on all engineering questions and hear disputes on rejected applications for the installation of fuel-burning apparatus. All persons installing such equipment in the city must file the application, together with the prescribed fee of $2. Beside regulating the type of apparatus, which actually is only a part of the work of a smoke abatement bureau, whether in Pittsburgh, Cleveland, or Chicago, a careful check is kept on the emission of smoke from chimneys and stacks. The Pittsburgh limitation on smoke liberation ranges from 2 minutes in every 15 minutes of No. 3 smoke from any stack except that of a locomotive. In the latter cases only 1 minute is permitted in every 8 minutes.

Measuring Smoke

The Ringelmann Smoke Chart, which is used to measure smoke, divides it into five grades or densities, numbered 1, 2, 3, 4, 5. Number 1 is 20 per cent dense, or shuts out 20 per cent of light; number 2 is 40 per cent dense; number 3 is 60 per cent dense; number 4 is 80 per cent dense; and number 5 is 100 per cent dense, shutting out all light.

The smoke observer usually watches the stack for a period of an hour, and from his familiarity with the Ringelmann Chart he is able to differentiate the grades of smoke. The correct way to use this chart is to place it 50 feet away from the eye, at which point the vertical and horizontal lines of the individual densities of smoke converge to appear a solid gray or black. The observer's tally is divided into minutes, and each minute is divided into 15-second intervals. As the smoke comes out of the stack, the observer records the density and duration. After an hour's watch, all the densities are totaled and the average smoke density is derived according to the following formula:

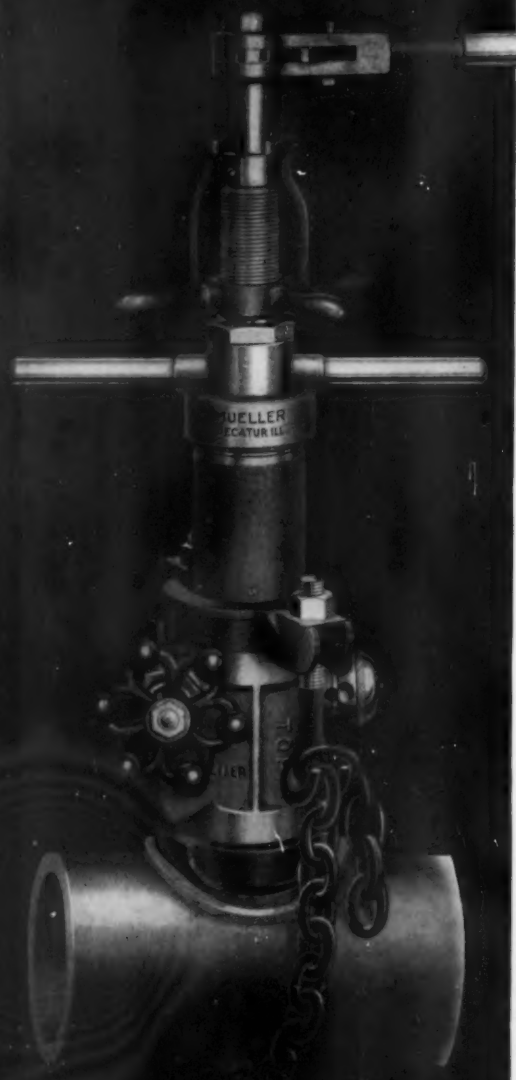
$$\frac{\text{equivalent units of No. 1 smoke} \times 0.20}{\text{minutes of observation}}$$

Let us suppose that the stack of the X Leather Company smoked 3 minutes of number 5; 4 minutes of number 4; 6 minutes of number 3; 10 minutes of number 2; and 15 minutes of number 1. By reducing all the densities of smoke to number 1 units we get 15 units of number 1 from number 5; 16 units from number 4; 18 units from number 3; 20 units from number 2; and 15 units from number 1. Units totaled equal 84. Applied to the simple formula:

$$\frac{84 \times .20}{60} = 28\% \text{ average smoke density}$$

In this manner every stack in the particular city may be given a case history, and watched in the future for further violations of the Smoke Abatement Ordinance. While it is difficult to say which grade of smoke produces a violation, most cities hold that any smoke equal to or greater than number 3 is against the law. The line of demarcation is so slight that only the experienced observer can spot one from the other. The only way to be sure that smoke is a number 3 and not

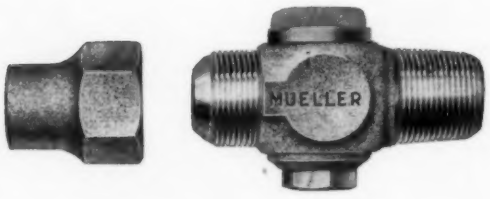
Mueller Methods Reduce Installation and Maintenance Expense



WATER TAPPING MACHINE "B"

For tapping water mains and inserting corporation stops ½" to 1" inclusive, under pressure. Will also make taps only from ⅜" to 2½" inclusive in dry mains.

Mueller Tapping and Drilling Machines are a necessity for economical installation and maintenance work on water distribution systems. They will drill, tap and insert corporation stops or will remove old ones and replace them with new ones of equal or larger size in mains under pressure without shutting down the line or interrupting service. They may be adapted to other purposes such as inserting pipe plugs and they will do straight drilling or tapping operations in dry pipe. The small drilling machines will drill through service clamps and corporation stops where the main is too small, weak or thin to permit tapping and the large drilling machines will drill through tapping sleeves and valves for making lateral or branch connections to mains under pressure.



For over three-quarters of a century, water works men have been specifying Mueller Corporation Stops and using Mueller Equipment to install them. Each Stop is designed with generous metal thicknesses so as to give strength where it is needed most and each key is accurately ground into its body to insure a leak-proof stop. These Stops, used in connection with Mueller Tapping and Drilling Machines, will save many dollars in installation and maintenance expense.

MUELLER CO.

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"MUELLER"—THE ACCEPTED STANDARD.

a number 2 is by watching it just as it emerges from the stack. If light or sky cannot be seen through at the point of emission, it is a number 3; if it can be seen through it is a number 2 smoke. Color of smoke is not the important factor to consider. Density is important.

City Regulations

In *Chicago*, "no new fuel-burning plants nor reconstruction of any existing fuel-burning plants for producing power and heat, nor either of them, nor refuse burning, nor any new chimney connected with such fuel-burning plant, shall be installed, erected, reconstructed, or maintained in the city until plans and specifications of the same have been filed in the office of, and approved by, the Deputy Smoke Inspector in Charge, and a permit issued for such installation." The plans must include the type of coal to be used, the amount of heating to be done by such fuel-burning plant, and provisions for securing complete combustion. Fees vary with the type of equipment installed, and fees charged against all charitable, religious, and educational institutions are remitted.

In *St. Louis* the regulations are similar, except that a Board of Appeals is set up to hear cases where plans and specifications have been rejected by the Commissioner of Smoke Regulation. In addition, St. Louis goes a step ahead of other cities by the restriction of certain coals. Any coal in sizes which will pass through a 2-inch circular opening or its equivalent, which contains in excess of 12 per cent ash or 2 per cent sulphur on a dry basis, is prohibited unless the coal is washed, and then not to contain more than 12 per cent ash.

Cincinnati does not use the Ringelmann Smoke Chart for measuring the density of smoke. Instead, a color scale of measurement has been adopted which prohibits smoke of a greater degree of darkness than number 1 scale, which is considered dense smoke. This is derived by "one thickness of grey glass of sufficient capacity to cut off 60 per cent of light from a flame having the lighting power of 16 candles." All locomotives in the city of Cincinnati must be equipped with mechanical stokers or other approved mechanical devices to eliminate dense smoke. The fuel used in locomotives must have a volatile content less than 25 per cent.

In *Jersey City, N. J.*, a very effective Smoke Abatement Bureau has reduced the smoke in Hudson County, over which it has jurisdiction, by at least 80 per cent from the time that the Bureau took over the work. Headed by William G. Christy, the Bureau, like other similar bodies in this country, places restrictions on the installation of fuel-burning apparatus. Fees range from $1 to $50, and are levied against air jets, bake ovens, heating boilers, power boilers, boiler furnaces, warm air furnaces, gas burners, incinerators, mechanical stokers, oil burners, pulverized coal burners, ranges, smoke ovens, and water heaters.

Newark, N. J., one of the heaviest industrial areas along the Eastern seaboard, also maintains an efficient Bureau of Smoke Abatement, headed by William B. Schaum, a member of the Standards Committee of the Smoke Prevention Association. This Bureau licenses the installation of all new fuel-burning equipment and requires an application and a fee ranging from $1 to $50. Smoke readings are based on the Ringelmann Chart, which permits the emission of smoke (number 3 Ringelmann) to 2 minutes in a 15-minute period, and emission of smoke (number 2) to 12 minutes in an hour period. The Bureau is 32 years old, and has progressed to the point where today it has the Owens Automatic Dust Counter, the fourth in the area. The other three are located at Battery Park, Central Park, and at Stevens Institute of Technology, Hoboken, N. J.

While these Bureaus can place all kinds of limitations and regulations on smoke emissions and equipment, the most important factor in a successful smoke fight is to get the support of the press and the public. Agreed that city air is contaminated, urban dwellers should get behind their local bureaus to combat the smoke nuisance, for their benefit and for the health and welfare of their children. Like the microscopic bacteria, unseen by human eyes yet capable of producing untold ailments, the air we breathe is loaded with invisible gases and fumes highly injurious to the respiratory tract. People are not readily educated to the harm resulting from smoke, but when it comes to a stagnant pool which breeds millions of mosquitoes, or the handling of food by dirty hands, then they are quick to anger. Smoke, however, is a silent, deadly enemy.

Each one of us consumes 25 pounds of air a day, and little time is spent thinking of its cleanliness, yet what emphasis is placed on the 5½ pounds of food each of us eats daily. We all insist on pure food and water, but why not demand not only fresh air, but clean air?

To Prevent a Last Round-Up

IN a pamphlet, "All Together," from which this cartoon is reproduced, J. A. Wolf, Executive Director of the St. Louis Foundation for Neighborhood Improvement, brings humor to his aid in attacking a critical problem. As is true of most large American cities, St. Louis is becoming properly alarmed by the spread of cancerous blight around its heart.

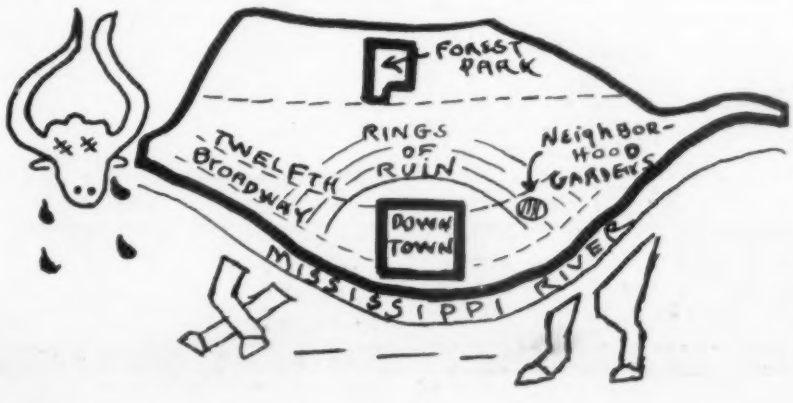
To keep St. Louis from "headin' for the big crack-up," the Foundation for Neighborhood Improvement urges substantial investments of both private capital and Federal money:

"(1) *Rehabilitation through Private Capital.*—Rents possibly from $25 to $50 per apartment, depending upon the effective clean-up and planning of an entire neighborhood. If the matter of rehabilitation is tackled with courage and intelligence, all of the splendid existing facilities will be used and improved.

"(2) *Slum Clearance and Low-Rent Projects with Federal Money* for those who cannot pay a profit-rent. Well-planned, well-managed flats or small homes with necessary conveniences, without frills and heavy maintenance charges."

The pamphlet points out that within its boundaries St. Louis has the potentiality for practically everything which a population of a million needs, and adds:

"If the heart is vital it must be strengthened. Great leaks to the country must stop. Families must live in and near the heart. Slums must make room for satisfying homes and neighborhoods, and the entire city must be made so attractive that people will not be forced to seek greener pastures elsewhere."



FLOOD!

● Flood's quick destruction is followed by the even greater menace of polluted water supplies—epidemic disease. In hundreds of communities, HTH has proved invaluable in meeting such emergencies. It's so easy, with HTH, to apply chlorination promptly, on the spot, wherever pollution threatens. HTH contains 70% available chlorine, is quickly soluble in water, and because of its high concentration, an effective quantity can be transported quickly and easily wherever the threat of pollution is suspected and *before* that threat becomes a dangerous reality.

Receding flood waters also leave a pressing and vital sanitation problem. Flood areas must be cleaned up, disinfected, after the muddy waters have passed. Again, HTH comes to the rescue. Highly concentrated, quick-acting, easily soluble and easily transportable—it has proved ideally effective in combating flood's dangerous aftermath and restoring sanitary conditions.

In commoner emergencies, too, HTH is a boon. Broken water-mains, interrupted power supply, polluted wells, abnormal conditions due to fire—in any number of emergencies requiring quick, effective chlorination, HTH proves its worth.

Keep a supply of HTH always on hand—as so many waterworks do nowadays. HTH comes in handy for a multitude of everyday sanitation jobs—and prepares you to meet the inevitable emergencies with prompt efficiency.

Write or wire us for full information on HTH and your nearest source of supply.

Be Prepared with* HTH *for any emergency

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Safe Boulevard Planting

Many Factors Contribute to a Safe Highway and They All Bear on the Pattern of the Planting

By Charles W. Barr
Assistant Professor of Landscape Architecture, Michigan State College

FOR many years the boulevard type of street has been considered an economic and beautiful asset to the community. It has been planted with all types of popular horticultural plant materials and has formed the basis for many pleasure drives. Today that local boulevard street has grown into an arterial highway connecting nearby cities or acting as a by-pass around a city. It handles fast-moving traffic and a large number of cars. The use of this modern boulevard differs radically from that of the old local boulevard, and yet it has the same general design and is being planted in the same old way. The dress of the modern boulevard must be changed in design to fit its new neighborhood and use, if it is to remain safe as well as beautiful.

A Scientific Premise

In order to find a sound solution to any problem it is necessary to start with either reasonable assumptions or basic truths, and in this particular case there are, fortunately, a few mechanical truths that can be used. First, it is known how many feet a car will travel in a second at varying rates of speed. Second, it is known how long and far it will take to move a car from a dead stop to obtain varying rates of speed. Third, the distance required to stop a car traveling at various rates of speed is known. Coupled with these facts should be such basic assumptions as the following: first, the sub-average driver must be taken as a base and not as the average; second, the time required for people to react to local conditions is very variable; third, such weather conditions as rain, fog and sleet make it almost imperative to consider the highway as built for people with very poor eyes.

With these facts and assumptions, consider the design of the modern boulevard. The central strip varies greatly in width, but if it is to provide a safety zone for cross traffic it must be over 20 feet in width or the larger cars will protrude into one or more traffic lanes. If the motorist is to use this zone safely as a haven while he prepares to cross or merge with the passing traffic, it is necessary that both he and the approaching motorist see each other clearly while a safe distance apart. What is that safe distance? It is found among those fundamental truths previously mentioned, so let them be studied in the following tables:

These distances do not consider such factors as worn tires, wet or slippery roads, and gradient of the road, but are reasonable figures for good conditions.

What Sight Distance Is Safe?

If a boulevard with 30-foot roadways and a 24-foot center strip is taken for study, it can be calculated from Table 3 that a motorist stopped in the safety zone of a cross street will take 3.8 seconds to cross the one strip of roadway under normal acceleration. During the same interval of time a motorist traveling at 50 miles per hour along the main road will have traveled 279 feet. Therefore, it is impera-

TABLE 1—SPEED ANALYSIS

Miles Per Hour	Feet Per Minute	Feet Per Second	Seconds Per 100 Feet
20	1,760	29.3	3.4
30	2,640	44.0	2.2
40	3,520	58.6	1.7
50	4,400	73.3	1.3
60	5,280	88.0	1.1
70	6,160	102.6	.97

TABLE 2—STOPPING DISTANCE FOR CARS

Miles Per Hour	Distance in Feet Brakeage	Distance in Feet Reaction	Total Distance
20	22	22	44
30	50	33	83
40	88	44	132
50	138	55	193
60	198	66	264

TABLE 3—TIME RATE AND DISTANCE OF SPEED CHANGE FOR 5 MPH

	Normal Acceleration			*Full Acceleration*		
MPH	Time Seconds	Rate MPH per Second	Distance Feet	Time	Rate MPH per Second	Distance Feet
0-5	1.7	2.9	6	1.5	3.9	5
5-10	2.0	2.5	22	1.4	3.6	15
10-15	2.3	2.2	42	1.5	3.3	28

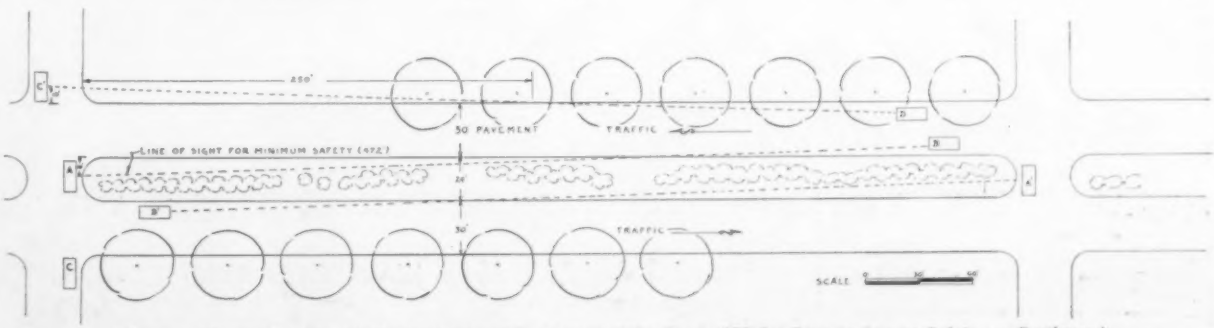


Diagram Illustrating the Methods of Planting Advocated by Prof. Charles Barr to Insure Safety on Boulevards

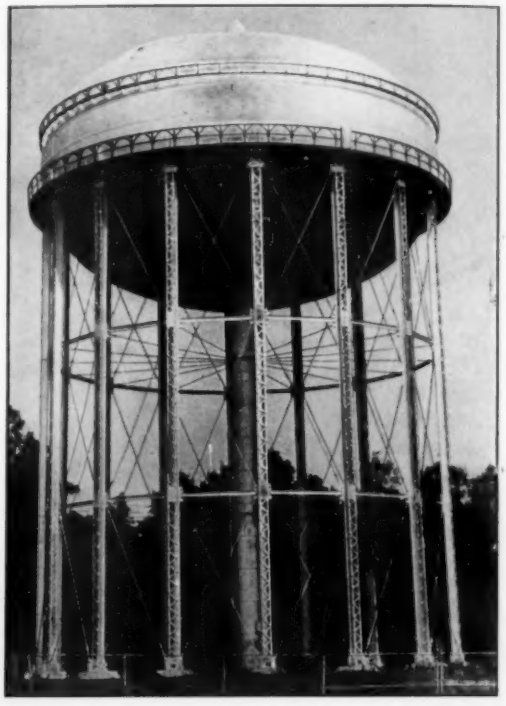
A Modern Improvement In Municipal Engineering

COLE OVALOID DESIGN

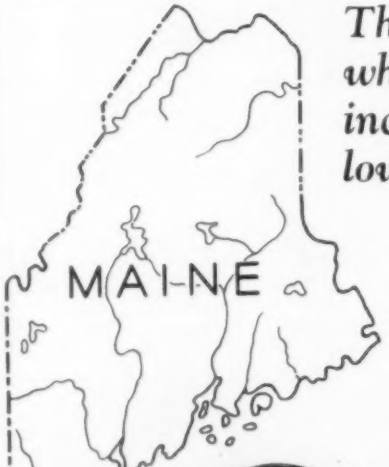
Improvements of water works system at Florence, Ala., required an elevated storage capacity of 750,000 gallons. The requirements were that the capacity be contained in a shallow depth to avoid large variations in pressure on the distribution system, and for a tank of pleasing appearance.

THESE TWO CONDITIONS were ideally met with a Cole "Ovaloid" design with suspended type bottom, providing shallow depth of water and obviating the necessity of beams to support the bottom of the tank. The curvature of the bottom prevents accumulation from sediment, is entirely self-supporting and a portion of the water is stored in the roof section of the tank, both roof and bottom being of the same curvature without straight sides, making a perfect "ovaloid," symmetrical in outline, pleasing in appearance and easily maintained.

Write for our *"Tank Talk" Bulletin No. 18-A* and for information and dimensions to meet any specific condition as to capacity, elevation or pressure head for your locality.



R. D. COLE MANUFACTURING CO.
ESTABLISHED 1854
NEWNAN GEORGIA



The same story wherever you go— increased capacity, lowered power costs,

When mains are cleaned by

The NATIONAL METHOD

A Water Company in **Maine** reports as follows on a National water main cleaning of 7,100 feet of 6" main, which in 35 years had become heavily incrusted:

Before Cleaning "During the peak season it was necessary to operate the pumps from 20 to 24 hours a day, and even then it was difficult to maintain an adequate reserve of water in the standpipe.

"Pitometer tests on this 6" main indicated a coefficient of C = 57 at a flow of 178 g.p.m., which was the maximum delivery of the larger of two electric driven centrifugal pumps. The friction head alone on this line was 70 pounds, necessitating an operating pressure of over 150 pounds against a full standpipe head."

After Cleaning "After cleaning, Pitometer tests between two gauging stations 6400 feet apart showed a total friction loss of only 38 feet at a flow of 250 g.p.m.—or a coefficient of approximately C = 130. This reduction in head caused an increase in pumping capacity of 90,000 g.p.d. More important, it allowed the pump to operate at a much more efficient point on its characteristic curve.

"Before cleaning, this pump consumed power at the rate of 2.04 kw.h. per m.g.; afterward, at the rate of 1.70 kw.h. per m.g. Translated into dollars, this difference in power consumption represents, for the average year, a reduction in pumping cost of $270. The cost of the cleaning work will be amortized in 3½ years from the saving in pumping costs."

Section of a tuberculated main as it looks before cleaning.

"Main cleaning greatly improves fire protection and domestic service, effects large savings in pumping costs, and may increase the valuation of a given pump system. . . . With proper chemical control, further incrustation in the cleaned pipe can be materially retarded, if not completely prevented."

Make your plans to attend the 60th Annual Meeting of the American Water Works Association, Kansas City, Mo., the week of April 21, 1940.

THE NATIONAL WATER MAIN CLEANING COMPANY
30 Church Street New York

tive that they can see each other when they are more than 279 feet apart. There are times when it is possible to avoid an accident by causing the faster-moving driver to switch lanes, but that is not safe driving. There is also the possibility of a car stalling before it crosses the pavement, a slower crossing due to ice or poor driving, and other similar events that may make it necessary for the other driver to use his brakes. In Table 2 it is shown that a car traveling 50 miles an hour will require at least 193 feet in which to stop. This distance is within the necessary sight distance, but does not adequately care for horn-blowing time or winter weather. Therefore, to care for most contingencies, the travel distance of the faster-moving motorist and his brakeage distance should be added together to give the necessary distance for clear vision required by the waiting car in the safety zone. This total is 472 feet.

There are very few boulevard plantings today that permit 472 feet of clear vision, because the trees and shrubs are planted within a central strip of the planting space, and too high-growing shrubs were used in the wrong area near the intersecting streets. It is possible, however, to give adequate vision, as shown in the accompanying plan.

Safety Planting

In locating the areas in which shrubs may be placed with safety, the line of sight has been taken 10 feet from the curb intersection so that the driver will not feel required to encroach upon the opposing road in order to see, and a minimum strip of 5 feet is allotted for grass next to the curb of the central division strip. It is then seen that the planting area goes in a diagonal across the 500-foot strip. The line of sight between cars A and B, A' and B', should be kept entirely free. At first glance it may seem that such a scheme eliminates the possibility of the usual semi-informal style of planting, but if two blocks are taken into consideration, it will be seen that there is a greater opportunity to avoid the straight-line planting.

The problems of plant arrangement and selection are much simpler with the foregoing plan, as there is no worry about plants growing too tall and causing accidents if the maintenance crew doesn't get around to cutting their heads off soon enough. The chief thing to avoid is an opening in the planting that is large enough to encourage the driver of car C, with a sense of false security, to cross the safety zone without stopping. For the same reason it seems that the shrubs near the intersection should be tall, for a driver will obey a stop sign quicker if he can't see the traffic until he reaches the required point.

It is also important that drivers in the position of C' have their vision clear. To do this, there should be no shrub planting near the curb for the first 250 feet. The matter of trees within that area is a debatable question. If trees are used, they should be high-branching and spaced far enough apart to prevent the trunks from lining up and making blind areas as they near maturity. It would be very much better if the trees were placed in the front lawn areas, 10 feet back from the curb.

To Welcome Planning into the Family Circle

THE American Planning and Civic Association is writing another and somewhat new chapter in planning education. Planners, educators and city administrators agree that their fellow citizens have not been quick to become familiar with the objectives and values of planning. People are quite content with a bowing acquaintance and have not yet admitted the newcomer into the family circle. The fault may have been in the too formal introductions. With a few exceptions, like the City Planning Primer, both the writing and the speaking on the subject are rather forbidding.

The new effort of the American Planning and Civic Association is an invitation to the people to meet planning under circumstances which make for more intimate acquaintance. In Portland, Maine, and Bridgeport, Conn., where it is over the first hurdles, people are invited to join "discussion groups." The first groups have been carefully selected from those who know planning a little and are interested to improve their acquaintance. In Portland and Bridgeport invitations were sent to about 150 citizens and public officials. The Portland group of 30 has finished its series of four weekly meetings. The Bridgeport group of 25 will finish its five meetings early this month (March).

The Discussion Group Plan

Informality is the first essential. "Adult education" and "lectures" are expressions not used and techniques not followed in these discussions. The leader outlines the nature of the planning process, its value in the city's development, and where parks, streets, zoning and housing fit into the process, but he is first of all a prompter of questions and answers; he steers the discussion and summarizes it. Groups larger than 25 or 30 might defeat the purpose.

Right leadership is the second essential for success. Leaders too full of their subject or too anxious to expound it will not do as well with the question and answer method. Portland was fortunate in having competent leaders among its officials. The Building Inspector handled zoning, the Park Director took care of recreational activity, and the City Manager led the final session. The Fairfield County Planning Association supplied the leadership in Bridgeport.

The discussion-group plan can readily be modified to meet local conditions. Groups may be sponsored and leadership provided by the planning commission or by the local college or technical school. It may be desirable for one leader to carry through all the sessions.

The usefulness of discussion groups does not stop with the close of the weekly sessions. They have great possibilities as unofficial citizen planning councils—the sales agencies of the planning process. They may organize other discussion groups, may get planning committees appointed in larger civic organizations, may promote a movement for an official plan commission or do valiant service as a citizen advisory group to an existing commission.

FLAVEL SHURTLEFF,
Counsel, American Planning and Civic Association.

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After collision, the only parts necessary to replace are the standpipe clamp and the hydrant stem frangible coupling. The hydrant valve, being of the compression type and guided throughout its travel, will remain closed. Even if it is open at the time of collision it will close instantly thus preventing flooding of streets.

Make your plans to attend the 60th Annual Meeting of the American Water Works Association, Kansas City, Mo., the week of April 21st, 1940.

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L. E. WITNEY, Managing Director

Told by Chief R. E. Mottesheard

In Dearborn's Fire Department

DEARBORN, MICH., is a fast-growing city of 80,000, with 1,000 families arriving per year. Its area of 25 square miles is in three sections: the west section of fine residences, four miles distant from the northeast section of good residences, and the working-class southeast section, where 27 languages are spoken and fire hazards are many.

The city is now protected by three fire stations—headquarters, No. 2, and recent No. 3. We shall soon erect two new fire houses, each equipped with a new pumper and a ladder truck.

Present Equipment

Fire headquarters and fire-alarm headquarters are separate buildings in the civic center park, which also contains the city hall. At fire headquarters are two 1,000-gallon American-LaFrance pumping engines dating to 1925 and 1927 respectively. There is also a chemical and hose truck of 1925, carrying 1,000 feet of 2½-inch hose, two 35-gallon chemical tanks, foam generators with 500 pounds of foam powder (1,500 pounds in stock, with Detroit to draw on), and a 1,000-gpm A. J. Morse turret gun. To all appearances, these trucks are in good running condition, but extensive repairs are imminent, and the trucks should be placed on reserve. There is a 1930 service truck carrying a Fognozl, a vapor nozzle of the Akron Brass Co., an 1,100-gpm Morse turret gun, a MSA hose mask and 125 feet of hose to supply air, and a cellar pipe. Two Ford pick-up trucks are sent to fires where the known conditions warrant this service.

The most recent service is an enclosed Ford rescue truck installed in 1939. It is equipped with two-way radio and includes the following key items of equipment: three H-H inhalators; Burrell All-Service gas masks; McCaa two-, one-, and half-hour oxygen outfits of Mine Safety Appliances Co.; a 1,500-watt Homelite generator; a 250-watt Crouse-Hinds spotlight and two 500-watt floodlights; and an acetylene cutting outfit.

Number 2 fire house, in the original city of Dearborn, two miles from the South End, is equipped with two 750-gallon pumpers of 1924 and 1926, a city service truck of 1925, and a pick-up truck.

Manual Fire Alarm

Facilities are now available for full manual operation of our Gamewell fire-alarm system. Half of our 400 annual alarms are sent in by box. The 230 boxes are distributed so as to have one at every other intersection. In addition, there are 60 police patrol boxes which the policeman can pull or from which he can use the telephone. As stand-by power, there is a LeRoi-General Electric gasoline-motor generator set, and batteries on trickle charge, and a Western Electric battery charger. Alarm headquarters has a shop equipped with a power drill and a power-saw grinder made by the Delta Manufacturing Co., of Milwaukee, and a lathe of the Sheldon Machine Co. Finally, there is a municipal telephone system, made by the Automatic Electric Co.

Inspection

During the last three years a lieutenant has been assigned full time to the inspection of business buildings, installations of inflammable liquids, gasoline stations, oil business, and the equipment of amusement places with fire extinguishers. The company officers of course familiarize themselves with the buildings in this area, with respect to entry, nature of stock, sprinklers, stairways.

The Men

The last two groups of recruits were selected by civil service examination. The attractions for these men are: a growing city; 20 days vacation; salary of $2,000 to start and $2,500 as first-class firemen; freedom from politics; and 24 hours on and 24 hours off, which—for all of the three-platoon systems—firemen like.

New men are trained by being put in companies. One of our items of training is to blindfold a man and ask him to go get a Siamese or a nozzle or a hose jacket. That teaches him the importance of knowing where things are. Asking him to get a 12-foot pike pole (not a 10-foot, mind you) trains his eye. Plans are being laid for advanced training to determine what technical subjects the various men prefer, so that we may develop specialists in gases, hydraulics, first aid, fire prevention, arson.

How Many Taxing Units Do We Need?

THERE ARE 161,144 TAXING DISTRICTS in the United States, according to an Atlas of Taxing Units recently published by the Illinois Tax Commission. Based on this compilation, the Tax Policy League (907 Broadway, New York) calls attention in the January 24 issue of "Taxes for Democracy" that "Illinois has 15,100 taxing units, but Maryland gets along with 173, Virginia with 318, and Massachusetts with 370. Rhode Island and Delaware have 40 and 102 respectively. Kansas, Minnesota and Missouri are runners-up for the highest score with 10,000 or 11,000 taxing units apiece."

Query (by the Tax Policy League): "Do Illinois citizens get more democracy and better government with 15,000 units than Maryland with 173? The pattern of local government in Illinois is the most complicated and in Maryland and Virginia the most simplified of any states in the country. Which system is better for the citizens?"

The bulletin points out that authorities differ as to the number of these governmental units in the country. In 1934, in a study made by the Bureau of the Census, it was estimated that there were 167,699 taxing units in the United States. For that same year Professor William Anderson, using a somewhat different basis of classification, arrived at a total of 175,417.

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Problems of the Garden City

(Continued from page 41)

to mention its lack of a rational plan, has been the occasion for widespread discussion. A fillip to the views of proponents of the garden city idea was given by the hearings before the Royal Commission on the Geographical Distribution of the Industrial Population, which began in the autumn of 1937. Before the Commission could report, the chief anxiety occasioning the survey, the fear of war, was justified by the realization of that contingency.

The growth of the garden cities has been slow. London, on the other hand, has spread by leaps and bounds, steadily pushing its mass into the free spaces on its periphery. This growth has been one of the occasions for the establishment of Special Areas Commissioners to attempt the rehabilitation of older industrial areas now depressed. The national government's policy in this regard, however, has been slow and hesitant, and up to the outbreak of war no reversal of the flow of population to London and the great cities of the Midlands could be discerned.

British housing for workers has for a long time been based upon the ideal of the individual cottage. At the present time some tendency to the construction of large apartment houses or flats can be noted, a tendency bitterly opposed by the garden city proponents, who point to the fact that the subsidization policy of the national government promotes the building of flats by offering a higher subsidy where such units are constructed. In addition, these leaders state that the total expense to the public of flat construction will be greater than the expense involved in the establishment of garden cities. There can be little question that the construction of flats will not materially lessen certain big city inconveniences, such as excessive travel, and it may add serious difficulties through increased land values and less wholesome living than can be obtained in smaller communities.

The war adds point to the controversy, but it is a serious question whether its conclusion may not leave a nation too exhausted to proceed with the reconstruction of local life pointed out by the garden city idea. At the moment, war, as usual, calls a halt on any constructive activity. Time will show whether it will implant new appreciation of advanced concepts of city planning.

Meanwhile, in England as in other democratic countries, as F. J. Osborn, Honorary Secretary of the Garden Cities and Town Planning Association, has pointed out in a recent letter to the editor of THE AMERICAN CITY, "the mechanism of planning is trying to adapt itself to the preservation of individual liberty and enterprise. The problem is part of the general Western problem of finding the right methods and limits of social control. Complete centralized control, as in Russia or Germany, is an evasion of the central problem. You get a pattern, but not a close adaptation to all the multifarious human requirements and wishes."

NOTE: The writer wishes to thank the Social Science Research Council under whose fellowship he was enabled in 1937-38 to collect material contained in this article.

Regional Conference on Citizenship and Government

FORUM discussions of citizenship and government featured a three-day regional conference held under the sponsorship of the National Municipal League and the Minneapolis Civic Council at Minneapolis, February 19, 20 and 21. Two forums each day which covered the fields of taxation, civil service, forms of municipal government, public relief, social security and employer-employee relations were supplemented by luncheon discussions led by representative authorities who spoke on the respective subjects. A "Citizenship Dinner," addressed by C. A. Dykstra, President of the University of Wisconsin and President of the National Municipal League, who keynoted the conference with a discussion of democracy's future, highlighted the conference.

The conference was the first regional to be held in the states of the upper Mid-West, and delegates attended from Wisconsin, Iowa, South Dakota, North Dakota and Minnesota. Cooperating organizations with the Minneapolis Civic Council, which acted as host, were the Minneapolis Council of Civic Clubs, the Fifth District Minnesota Federation of Women's Clubs, the League of Minnesota Municipalities, the Minneapolis League of Women Voters, the Minneapolis Taxpayers Association, the Minnesota Tax Conference and the Woman's Club of Minneapolis.

The entire first day was devoted to taxation and tax problems, with the accent on the new government organization in Minnesota, which, among other things, has undertaken to streamline tax administration in the state. The new system was established by act of the 1939 Legislature, and the progress that has been made in getting the system into operation was discussed in various phases by state officials. Property taxation problems and their relation to relief financing were discussed by local officials and citizens from the states represented.

The forums on civil service and municipal government were addressed by such national authorities as Dr. Leonard D. White, Vice-President of the National Civil Service Reform League; William P. Lovett, Executive Secretary of the Detroit Citizens League; Walter J. Millard, Field Secretary of the National Municipal League; Kenneth C. Pennebaker, Director of Minnesota's new civil service department; and Miss Ruth Mitchell, President of the Minnesota League of Women Voters. Numerous local and state authorities, together with members of the faculty of the University of Minnesota, contributed to the discussions which occupied the second day.

An outstanding feature of the conference, and one that may play an increasingly important part in other regional meetings throughout the country because of the interest aroused at Minneapolis, was the forum on public relief, social security and employer-employee relations. It brought out what were perhaps the most spirited discussions of the three days. Representatives of organized labor, the employers and the public joined in the discussion with leading municipal, state and Federal officials.

The use of "Town Hall" meetings to take civic problems directly to the people, and the success of the movement in Minneapolis where it has been tried out the past several months, came in for discussion. Allen H. Seed, Jr., Executive Vice-President of the Minneapolis Civic Council, which has sponsored the Town Hall meeting movement, said that upwards of 200 of the meetings will be held before the program concludes, the latter part of April. As a result of the meetings, and interest aroused, citizens of Minneapolis in all walks of life are becoming better acquainted with their local government and with taxation, relief, traffic safety and other problems.

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PLAIN CAST OR SPUN CENTRIFUGAL

Cast Iron Pipe and Special Castings, Bell and Spigot, Flange, Flexible Joint, Culvert, Milled and Plain End Tubes, Cylinders, Flanged and Bell and Spigot Fittings, High Pressure Fire Service Pipe, Warren Short Body Specials, Threaded End Pipe.

Size 2 to 84-inch

Pipe manufactured in accordance with standard specifications adopted and approved by water works associations and engineers.

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The Original Manhole Cushion

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TAPAX MFG. CO., Inc.
203 HOYT AVENUE MAMARONECK, N. Y.

Municipal Softening Plant

(*Continued from page 45*)

tion flumes. Adjacent to the unit in the basement are the sump pump and the Chicago sludge pump, which can return a portion of the settled sludge from the clarification tanks to the No. 1 mixing chamber and the rest to the sanitary sewer. Here also is the Bryant boiler to furnish steam heat for the building in winter, and a Ruud gas water heater for house service.

Chemical Treatment

A platform adjacent to the elevator on the ground floor serves as a receiving platform for the soda ash and lime used in the plant. It is moved by hand truck to the automatic electric freight elevator at the front of the building and raised to the third floor for storage and delivery to the two Infilco dry chemical feed machines. The chlorine room is located on the operating-room floor next to the delivery platform, and contains the Pardee chlorinator.

An automatic control on the reservoir shuts down the filter effluent whenever the reservoir is full, and automatically opens the valve when the water drops in the reservoir.

Trial operation with 15 grains per gallon of lime and 1½ grains per gallon of soda ash reduced the hardness from 395 ppm to 126 ppm, but owing to the lack of turbidity the filter sand clogged, and runs of about 16 hours were the best that could be obtained. This was with recarbonization.

Then sludge from the settling tank was fed back into the mixing tank with the chemical feeds, and the induced turbidity has improved the flocculation and subsequent clarification to the point where filter runs of 60 and 70 hours are now the rule. It is much easier to maintain a stable water, and a slight increase in the softening chemicals used has brought the total hardness down to 90 ppm. At the present time, the sludge from the sump is being divided, part of it going back to the mixing tank, and the rest to the sewer, as mentioned above.

Building-Floor Plans

The entire structure, of attractive appearance, has the ground floor at a slight elevation above the ground, necessitating considerable backfill and grading. The front entrance is approached by two short flights of concrete steps and a concrete walk. The entrance vestibule is tiled and leads directly to the stairs to the second floor. At the left is the electric freight elevator, and back of that the chemical unloading room. At the right is the service room.

The main floor above the ground floor contains the elevator at the left, and adjacent to it the toilet. On the right is the superintendent's office, and the laboratory, which has unusually complete analytical equipment, both chemical and bacteriological. The center corridor leads directly back to the filter operating floor, with the filters on the right, and the mixing tanks, the coagulation tanks and the chlorine room successively on the left back of the chemical feed room, which is directly back of the elevator.

Above the main floor is the chemical storage floor, with access by elevator or stairs. Two openings from this floor permit the hoppers of the chemical feed machines to be filled from above, and the rest of the floor space is available for chemical storage. A ladder on the wall leads to the floor above, which supports the 30,000-gallon wash-water tank. A ladder through a stainless steel hatch leads to the roof.

The building measures approximately 39 feet wide and 65 feet long at the main floor. One of the attractive features is the use of glass blocks for the windows around the filters, giving bright illumination from the outside. The interior finish of the plant is terra cotta tile and quarry tile floors.

This plant, for a population of 11,000 with an additional 1,400 in the Normal School, was designed by Shoecraft, Drury & McNamee, of Ann Arbor, Mich., as consulting engineers. Strandberg & Spencer, Inc., of Chicago, Ill., were the contractors. The plant is operated under the direction of T. Fred Older, Superintendent of Public Works.

Well-Landscaped Sewage Works

(*Continued from page 38*)

time comes around." Thousands of the citizens of the district now take a greater interest in the work the Sanitary District is accomplishing for their welfare.

The beautification of the plant has always been a secondary matter, however. The primary purpose of efficiency of operation has always been uppermost in the minds of the trustees. Figures show the Bloomington and Normal plant to be one of the best managed in the lowest cost group of the many well-managed plants in Illinois.

The creating of beautiful surroundings, together with the interest and appreciation of the public, gives the staff of the plant added pride in being connected with the Bloomington and Normal Sanitary District.

Pamphlets on Water Rates and Service Charges

The reprints of the Water Rates and Service Charges for 110 cities published in 1939 in THE AMERICAN CITY are now available at one dollar each.

THE AMERICAN CITY, 470 Fourth Avenue, New York:

Reserve ..... copies of the 1940 reprint of "Water Rates and Service Charges" for me at $1 each. Send ..... copies of the January, 1935, reprint, and ..... copies of the January, 1936, reprint when the 1940 pamphlet is mailed. This gives me the advantage of the special rate of 50 cents each for the 1935 and 1936 pamphlets.

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DURABILITY
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LOW COST MAINTENANCE

BADGER *Water* METERS

Water Rates and Service Charges

1940—Part III

Covering Domestic and Industrial Meter Rates, Discounts and Penalties, Installation Charges, Fire Hydrant Rentals and Fire Sprinkler Costs

Lapeer, Mich.

Present population	5,200
Population served	5,000
Number of active services	1,100
" " meters	1,075
" " hydrants	96
Miles of water main	35

Bills are rendered quarterly in Lapeer for water used at the following rates:

First	10 000 gals. or less	$2.50 (minimum charge)	
Next	40 000 "	.20 per 1,000 gals.	
"	30 000 "	.18 " " "	
"	20 000 "	.17 " " "	
Over	100 000 "	.08 " " "	

On December 11, 1939, an amendment went into effect granting a 10% discount from the gross water bill to those making written application who were not in default to the city.

The owner of any property may have his meter tested by depositing $1.50 with the City Treasurer to cover the cost of the test. If the meter registers 2% more than it should, the deposit is refunded to the property owner and settlement is made on the basis of the over-registration of the meter. But if the meter is found to register 100% or less, the deposit of $1.50 is retained to defray the expenses of the test.

The service lines are installed by the Water Department at the actual cost of material and labor, from the center of the street. Meters must be secured from the Water Department and are installed under its supervision, the cost of the installation being borne by the owner of the property. When the meter is secured, the consumer deposits a sum equal to the purchase price of the meter, which is held as a deposit and returned when the service is discontinued, with a deduction of 10% for each year, or fraction thereof, that the meter has been in service.

There are no hydrant rentals for either public or private hydrants, nor are there any charges for services installed for sprinkler heads for private fire protection.

F. J. Stephenson,
Clerk, Water Department.

Clearwater, Fla.

Present population	11,296
Population served	12,000
Number of active services	4,067
" " meters	4,058
" " hydrants	386
Miles of water main	83

The water rate schedules in Clearwater are divided into domestic, industrial and special sprinkling rates. The domestic rates are for residential service and stores, offices, business buildings, and apartment buildings, containing more than one business room or apartment, when service is rendered through one meter. The rates are a minimum charge of $1.25 per month, allowing the use of 400 cu. ft. of water. The rates for additional water are:

Next	600 cu. ft.	$ .20 per 100 cu. ft.	
"	9,000 " "	.15 " " "	
All over	10,000 " "	.10 " " "	

The industrial rates apply to mills, factories, ice plants, laundries and refrigeration plants, and have the same minimum rate as for domestic service. Water used in excess of the minimum is billed as follows:

Next	600 cu. ft.	$ .10 per 100 cu. ft.	
All over	1,000 " "	.08 " " "	

The special sprinkling rate applies to lawn sprinkling only, and has a minimum monthly charge of 50c for the use of 5,000 gals., or 666 cu. ft. Water used in excess of this amount is billed at 6c per 100 cu. ft. To take advantage of this special sprinkling rate, a property owner must have a water meter installed, at his expense, by the Water Department. If a consumer wishes to discontinue the sprinkling service, the Water Department shuts off the service and removes the meter and allows a salvage price on the meter. This usually is the cost of the meter, less 10% for each year, or part of year, the meter has been in service.

Water furnished to churches and charitable institutions is billed the same as the domestic rate, with a 50% discount on the total bill. Further allowances may be made as the City Commission directs.

All water bills are due and payable monthly following the month in which water is used. Accounts become delinquent 15 days following the rendering of the bill, and water service is discontinued after the bill has become delinquent. A turn-on fee of $1.00 is collected when the bill is paid, and then the water is turned on as soon as possible.

Service furnished to consumers outside the city limits is billed at rates 25% higher than the rates for similar service within the city. The cost of connections to the city mains, the meter and installation charge, are billed against the property owner. The application fees are the same as for customers within city limits.

Any individual or organization within the city wanting water service must make formal application for connection to the city water main to the Superintendent of the Water Department, who issues the permit. The tapping fee is paid to the City Collector before the connection is made. The fees charged for tapping are as follows:

¾" tap for a regular house service $10.00 for tap and all connections from the water main to outside the curb line; 1" $18.00; 1¼" $24.00; and 1½" $30.00.

Free fire protection service is furnished to buildings where the property owner pays for the tap and connection to outside the curb line. The connection to the curb is made by the Water Department and charged for at the cost of material and labor.

F. L. Hendrix,
City Manager.

Van Buren, Ark.

Present population	5,500
Population served	5,000
Number of active services	1,300
" " meters	1,300
" " hydrants	141
Miles of water main	15

The minimum charge for water is $1.00 per month. The water rates for metered service are:

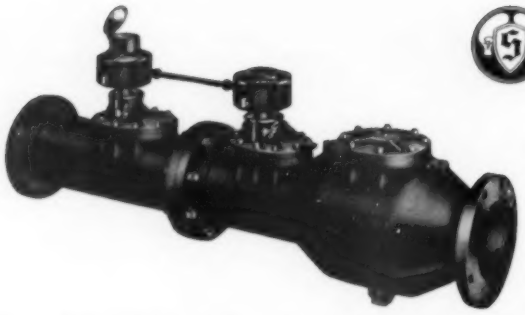
First	1,000 gals.	$1.00 per 1,000 gals.	
Next	4,000 "	.50 " " "	
"	45,000 "	.40 " " "	
"	50,000 "	.20 " " "	
"	900,000 "	.11 " " "	
Over	1,000,000 "	.105 " " "	

All consumers outside the Van Buren Water District limits pay 1½ times the regular rate. All property owners within the limits of the Water District are subject to a water tax, while those consumers outside are not, and take water only at their own option.

All consumers are required to make a service deposit of $5.00 as a guarantee of payment for service through a ⅝" meter. The Water District pays interest at the rate of 6% on service deposits. The District installs the service to the property line without cost to the consumer, but does require a contract for 12 months' service before the installation is made.

A charge of $3.40 is made to the city for each hydrant annually.

Henry E. Nunn,
Superintendent, Van Buren, Ark., Water District.



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Remarkably wide flow-range. On 24-inch lines, for example, accurate registration is assured from 90 to 8,000 gallons per minute!

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Saves at Least 75%

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Leadite tested and used for over 35 years • Leadite joints improve with age

Be sure it is Leadite and accept no imitations

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No Caulking

Rensselaer CONE VALVES

(Patented Hydraulic Operating Device)

Used for

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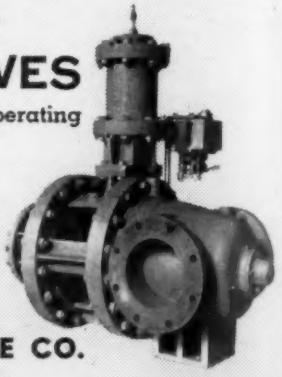
- PRESSURE RELIEF
- PRESSURE REDUCING
- AUTOMATIC CHECK



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TROY, NEW YORK

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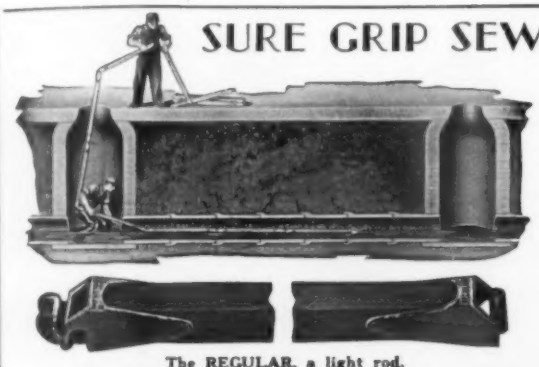

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Fir stock 1¼ x 1¼ inch square.

are joined together with a dual lock forming a rigid chain that will float. They can be coupled or uncoupled upon the street if desired. Made in two sizes.

The MASTER, a heavy duty rod,
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NAPPANEE, IND.

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The cents saved on every dollar spent may provide enough additional dollars to pay for additional work.

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Write for literature. Estimates furnished without obligation.

The William S. Hewett System
20 N. Wacker Drive, Chicago, Ill.

Rockland, Mass.

Present population	7,800
Population served	7,800
Number of active services	1,931
" " meters	1,931
" " hydrants	245
Miles of water main	38

The water rates for domestic use in Rockland are $2.25 per 1,000 cu. ft. Water used in excess of 35,000 cu. ft. yearly is billed at $1,125 per 1,000 cu. ft. The manufacturing rate is uniformly $1.125 per 1,000 cu. ft.

A water user is given the option of purchasing the meter outright, or paying a rental of $1.00 a year for a 5/8" meter, or for other sizes 10% of the cost of the meter per year.

The cost of installation of mains is paid by the applicant and the size is not limited, because the applicant pays the entire cost of installation. The size of the meter, however, is determined by the Department. The water-service applications require the applicant to agree to abide by the rules and regulations established by the town.

No charge is made to the town for the installation and maintenance of public fire hydrants. There is no rental charge for private fire hydrants, but the cost of installation and materials must be paid for in full by the party requesting the service. There are no meters on automatic sprinkler systems for private fire protection, nor are there any charges for sprinkler heads. The total cost of the installation of mains supplying the sprinkler services must be paid by the owner.

JAMES B. STUDLEY,
Superintendent, Water Department.

Kendallville, Ind.

Present population	5,439
Population served	5,439
Number of active services	1,660
" " meters	1,700
" " hydrants	161
Miles of water main	20

Bills for water are rendered quarterly in Kendallville, with a minimum charge of 75c per quarter, plus the meter rent. The water rates are:

First	5,000 gals.	$.25	per 1,000 gals.
Next	5,000 "	.20	" " "
"	5,000 "	.15	" " "
"	15,000 "	.12	" " "
All over	30,000 "	.10	" " "

A discount of 10% is allowed on all bills, except the minimum, if paid on or before the 25th of the month in which due. Bills are due in January, April, July and October.

The meter rents, depending on the size of meter, are:

3/4"	meter	$.15 per month
5/8"	"	.10 " "
1"	"	.20 " "
1 1/2"	"	.30 " "
2"	"	.50 " "
4"	"	.50 " "

No charge is made by the water utility for the installation of water services. There is a charge of $15 each per year per hydrant for public and private hydrants, but there is no charge for sprinkler head installations for private fire protection.

S. R. LUDLOW,
Superintendent, Water Department.

Trenton, N. J.

Present population	123,000
Population served	163,000
Number of active services	34,900
" " meters	12,266
" " hydrants	1,897
Miles of water main	294

The domestic meter rates in Trenton are $1.35 per 1,000 cu. ft., with a 10% discount if the bill is paid during the month of issue. The minimum bill is $3.00 per quarter, which permits the consumer to use 2,200 cu. ft. without further charge.

The commercial rates are 90c per 1,000 cu. ft., with a 10% discount if the bill is paid during the month of issue. The minimum bill for commercial services is $3.75 per quarter, which permits the use of 4,000 cu. ft. without extra charge.

Application for water service is made at the City Hall, and the cost of the service must be paid by the consumer at that time, at the following rates:

	Dirt Street	Paved Street
3/4" service	$32 50	$35 00
1" "	38 00	41 00
1 1/2" "	71 50	76 00

Prices are furnished to the prospective consumer on services larger than 1 1/2", in accordance with the length of the service and other conditions. On all installations the consumer pays for the street permit as follows:

Dirt streets	$2 00
Stone or macadam without oiled surface	10 00
Penetration macadam	15 00
Brick, asphalt, block or concrete streets	30 00

There is no charge for public fire hydrants within city limits, but there is a charge of $25 each per year outside the city. There is no charge for sprinkler heads for private fire protection, either inside or outside the city, for all fire lines are metered. The water consumed is charged at the industrial rate.

F. M. WINDER,
Director of Water Works.

Cape Girardeau, Mo.

Present population	18,200
Population served	17,836
Number of active services	3,982
" " meters	3,991
" " hydrants	294
Miles of water main	40

The water rates of the Missouri Utilities Co., Cape Girardeau, for all classes of service are:

First	10,000 gals.	$.40	per 1,000 gals.
Next	20,000 "	.35	" " "
"	50,000 "	.30	" " "
All over	80,000 "	.12	" " "

Those desiring water service must sign an application at the office of the utility and deposit $5.00 for the meter, which is required on each service. The services must be installed by local licensed plumbers at the expense of the consumer.

The charge for public fire hydrants is $2.50 per month each for the first 180, and all above that number are charged at $2.08 each per month. There are no charges for automatic sprinkler heads for private fire protection, as all service lines are metered.

FRED A. MOORE,
Cashier, Missouri Utilities Co.

Niles Center, Ill.

Present population	8,500
Population served	8,500
Number of active services	1,450
" " meters	1,450
" " hydrants	1,565
Miles of water main	128

The minimum quarterly charge for water service in Niles Center is $4.00, which permits the use of 2,000 cu. ft. of water. Water used in excess of this amount is billed at 15c per 100 cu. ft. There is a discount of $1.60 on the minimum charge, making the net charge $2.40.

The commercial rates for water service are:

			Discount
First	2,000 cu. ft.	$.25 per 100 cu. ft.	25%
Next	8,000 " "	.15 " " " "	10%
"	10,000 " "	.15 " " " "	15%
"	20,000 " "	.15 " " " "	20%
Over	40,000 " "	.15 " " " "	33 1/3%

When a water service is desired, the registered plumber takes out the permit for installing the service, before starting work. The city Water Department makes the tap and furnishes the curb box corporation cock and roundway, which the plumber installs at the expense of the consumer.

There is no charge for fire hydrants for public fire protection. The charge for sprinkler heads for private fire protection is $10.00 per year for 100 heads or less, and $5.00 for each additional 100 heads. Where a private fire pump is connected to the city main, there is a charge of $5.00 for each 50 gals. per minute capacity of the pump.

M. C. FUERST,
Superintendent of Public Works.

North Chicago, Ill.

Present population	10,000
Population served	10,000
Number of active services	1,500
" " meters	1,500
" " hydrants	181
Miles of water main	27

The minimum charge for water for domestic service in North Chicago is $2.25 for three months' service.

The domestic water rates are:

		Gross per 1,000 gals.	Net per 1,000 gals.
First	30,000 gals.	$ .38	$ .35
Next	150,000 "	.33	.30
"	270,000 "	.28	.25
"	1,050,000 "	.23	.20

The monthly industrial rates, with gross and net charges per 1,000 gals., which are available if the bill is paid within 10 days of its date, are:

		Gross per 1,000 gals.	Net per 1,000 gals.
First	10,000 gals.	$ .38	$ .35
Next	50,000 "	.33	.30
"	90,000 "	.28	.25
"	350,000 "	.23	.20
"	500,000 "	.21	.18
"	1,000,000 "	.18	.15

These rates are on a monthly basis.

Say! Easy to open, easy to close even in sub-zero weather. I say "Specify Mathews" with its sealed-in operating threads.
Look! Full strength with no built-in breaking point! Yet it's as quickly repaired as any hydrant made. An advantage exclusive to Mathews Hydrants.
Hey! A "permanent hole!" Here's where you lift out all working parts to fix accidents, inspect valve seats, or make general overhauls.
The entire barrel, including all working parts, slips through a loose protection case and screws into the elbow. This assures protection against frost-heave, and allows quick removal for inspection, repair, or overhaul. Write for booklet.

MATHEWS HYDRANTS

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Manufacturers of Sand Spun Pipe (centrifugally cast in sand molds) and R. D. Wood heavy-duty gate valves for water works

400 CHESTNUT STREET, PHILADELPHIA, PA.

During March we hope you will remember to mention THE AMERICAN CITY.

Each application for water service must be accompanied by a deposit of $5.00 to guarantee the water account. The charge for tapping for a water service is $6.50.

Water is shut off without further notice if a single quarterly blill rendered is unpaid 30 days after date. Water is not turned on again until all sums due the Water Department are paid.

There is a hydrant rental of $3.00 per hydrant per year for public or private hydrants, but there are no charges for sprinkler head services.

L. WAYNE FENNELL,
City Engineer, Water Department.

Dover, N. H.

Present population	15,000
Population served	14,000
Number of active services	2,490
" " meters	2,490
" " hydrants	276
Miles of water main	40 71

The rates for water taken through metered services in Dover are:

First 13,000 cu. ft. per year	$ .21 per 100 cu. ft.
Next 53,000 " " same year	.19 " " " "
Excess in the same year	.17 " " " "

In no case where a meter is installed is the annual charge less than $10.00, which covers the cost of 4,347 cu. ft. All water drawn in excess of that quantity is paid for in accordance with the rates above. All bills due the Water Department are rendered quarterly January 15, April 15, July 15 and October 15, and must be paid at the office of the Superintendent within 60 days. A fine of 25c is added after 60 days, and the water is shut off if unpaid 90 days after issue. The Water Department reserves the right to put a meter on any service where it is considered desirable, and the charge must be paid by the owner, or an annual rental agreement is entered into. The annual rental for meters installed by the Department is 10% of the cost of the meter. Such meters are repaired at the expense of the Department, except where damage is caused through carelessness of the consumer.

The Water Department in supplying water, doing work, or furnishing material, deals only with the owner of the premises, although the payment for service may be assumed by an agent or tenant. In the case of transfer of title to property, or death of the owner, the premises are not relieved from payment of back bills. Chapter 71, Section 13, of the New Hampshire Laws of 1927, makes unpaid water rates a lien on property for the period of one year from the date of the last item charged in the water rates. The lien may be enforced by a suit in behalf of the city.

Any water consumer not satisfied with the reading of his meter may have it taken out and tested in his presence if desired, at a cost to be decided by the Department. If a meter fails to register or gets out of order, the owner is charged at the average daily consumption of the three previous years.

All applications for the use of water must be made at the office of the Superintendent on a prescribed form, stating fully and truly the uses to which the water is to be applied. These applications must be signed by the owner of the premises, or his duly authorized agent. A charge of $2.00 for a dwelling house and $5.00 for a block is made for water used for building purposes. The applicant for service is required to make an advance payment, before any new work is begun, to reimburse the Department for all expense incident to the installation of the service. This regulation also applies to repairs on service piping, the setting of new meters, or the repair of meters already installed.

All service pipes are 1" wrought iron, cement-lined, or ¾" extra-heavy underground copper tubing, and are laid by the city to the inside of the cellar wall. For this service pipe the applicant is charged the actual cost, measuring from the street line to the end of the pipe within the cellar or basement wall, and the additional cost of a stop or waste cock, which is placed by the Water Department at the end of each service pipe within the cellar or basement. There is a minimum charge of $10.00 for tapping the main, in addition to the above costs.

A fee of $1.00 is collected for turning on the water when it has been shut off by request of the owner, tenant, or plumber. Any violation of the rules and regulations of the Department, or failure on the part of any water taker to promptly pay any and all claims of the Department, are considered sufficient causes for cutting off the supply, which remains turned off until all such cause of complaint have been removed, and the sum of $1.00 has been paid the Department for turning on the water. Where two or more parties take water through one service pipe, the provision in regard to cutting off the supply is applicable to all such parties, although one or more of them may be innocent of any cause of offense.

There is no charge for public fire hydrants, nor for services to sprinkler installations for private fire protection.

WALTER C. CAMPBELL,
Superintendent, Dover Water Works.

Wilson, N. C.

Present population	18,000
Population served	18,000
Number of active services	3,068
" " meters	3,068
" " hydrants	315
Miles of water main	54

The water rates for Wilson are:

First	500 cu. ft.	$ .20 per 100 cu. ft.
Next	2,800 " "	.15 " " " "
"	6,800 " "	.125 " " " "
All over	10,000 " "	.11 " " " "

The minimum monthly bills submitted are based on the size of the meter as follows:

¾" meter	$1 00 per month
1" "	1 00 " "
1½" "	4 00 " "
2" "	7 00 " "
3" "	12 00 " "
4" "	20 00 " "

A 10% penalty is added to all bills 10 days after the date of the bill. Service is discontinued if bills are not paid within 15 days from the date of bills, and service is not restored until all charges have been paid, including $1.00 for turning on the service again.

The charges made by the Wilson Utilities for the installation of water services are:

1" service	$20 00
2" "	40 00
4" "	60 00

Fire hydrants installed for municipal fire departments are billed the city at $3.70 each per month. There are no private fire hydrants, nor are there any charges for sprinkler heads installed for private fire protection.

L. E. JOHNSON,
Superintendent, Wilson Utilities.

Middlesboro, Ky.

Present population	12,000
Population served	9,000
Number of active services	1,875
" " meters	1,800
" " hydrants	74
Miles of water main	30

The rates for water service in Middlesboro are:

First	5,000 gals.	$ 35 per 1,000 gals.
Next	10,000 "	30 " " "
"	10,000 "	25 " " "
"	25,000 "	22 " " "
"	50,000 "	18 " " "
"	100,000 "	15 " " "
"	300,000 "	11 " " "
"	500,000 "	08 " " "
"	1,000,000 "	05 " " "
Over	2,000,000 "	Rates on application

The monthly minimum charge depends on the size of the meter, as follows:

⅝"	$1 25 per month
1"	2 00 " "
2"	8 00 " "
3"	18 00 " "
4"	32 00 " "
5"	50 00 " "
6"	72 00 " "

An applicant for service signs a 4 x 5 orange-colored card, giving the name and address and date, the class of service required, the rate schedule, and the address to which the bill is to be mailed. The Kentucky Utilities Co., which supplies Middlesboro, retains the right at any time to require a customer to maintain a reasonable deposit in advance to secure the prompt payment of bills. Any portion of the deposit not applied to the payment of bills is refunded to the consumer when service is discontinued. Interest on the deposit is paid at the rate of 6% per year and credited to the customer's account.

The Water Company makes no charge for tapping the main and running the water service from the main to the curb line at the property to be served.

Both public and private fire hydrants are billed $40.00 per year each, or $3.33 per month, which is the unit of charge for all rates for all types of service. Sprinkler head installations for private fire protection are billed at $40.00 each per year, or $3.33 per month.

J. H. WOODSON,
District Manager, Kentucky Utilities Co.

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Forward Steps

Reported by Municipal Officials, Chamber of Commerce Executives, and Others

Montgomery Revises Street Naming and Numbering; Erects New Street Markers

MONTGOMERY, ALA.—"What street is this?" That's a question that soon need not be asked in Montgomery, Ala.

Through a $60,000 project—one of the most worth while the city has ever had—4,000 street markers are being cast and erected by WPA labor. In connection with this project, long-needed corrections of faulty house numbering and confusing street names are being made.

The markers, made of white concrete reinforced with steel, measure 4 feet high and 8 inches wide and deep. Two of them, one at the northeast and another at the southwest corner, will be placed at each of the 2,000 most important intersections. The names of the streets that converge, and the block numbers, are molded in the concrete, and painted in black enamel letters and numerals 4 inches high—easily read by motorists. The posts are placed in such a position that at night they are readily seen in the glare of automobile lights.

To date, 1,992 posts have been erected. An average of 272 markers are being made a month at a cost of only $4.51 each. This includes both labor and material.

Years ago an inadequate, haphazard method of laying out streets was employed, resulting in much confused naming and numbering of streets in the older sections of the city. There were more than 83 duplicating street names, and possibly 100 irregularities in numbering, making it difficult for residents, and almost impossible for strangers, to find their way about.

Ever since Roy Garrett became City Engineer, more than fifteen years ago, he has been trying to bring about more order by renaming and renumbering these streets. Taking advantage of the opportunity offered by the erection of new, permanent markers, the City Engineering Department under his direction is now making much-needed changes.

LOUISE FLAHERTY,
Montgomery Library Association.

A Tomorrow's Citizens Exhibition Held in Washington

WASHINGTON, D. C.—An unusual and enlightening exhibition devoted to the problems of "Tomorrow's Citizens" was shown in the New National Museum in the National Capital for three weeks beginning February 5. The Social Studies Committee of the American Association of University Women conceived and carried out the idea.

The general theme illustrated was that Tomorrow's Citizen is the responsibility of Today's Citizen, and the whole exhibit was presented with the idea of demonstrating that society's strength lies in the recognition of its social problems plus the full utilization of various types of remedies devised by the city and Federal governments. The present methods available in Washington for dealing with its social problems were gathered together in this exhibit and, by means of charts, dioramas, posters, pamphlets, and maps grouped upon the walls of ten different cubicles or booths, the ten following subjects were illustrated.

Civic Responsibility presented the need for educating youth to the need for character building through such organizations as the Boy and Girl Scouts, for recreation, for respect for public and private property, and for keeping the city clean; and adults to the need for better lighting and transportation, beautification of the city, better schools, more recreational centers, and legislation for public welfare.

Health was presented by graphs and charts which illustrated local disease conditions. These were shown to be generally encouraging, as the contrast between conditions of yesterday and today indicated a general decline in the prevalence of the major scourges in Washington, D. C.

Recreation was illustrated by plans and pictures of local park areas, with the play facilities provided for the general public. A plan of proposed recreation areas, furnished by the National Capital Park and Planning Commission, indicated that the citizens are aware of a need for increased recreational facilities of all sorts.

Crime Prevention was demonstrated through posters showing the various means through which bad citizens may be led to good citizenship. General statistics on the prevalence of various types of crime gave a broad general picture of this phase of life in the National Capital.

Labor was graphically presented by charts outlining the type and scope of various labor laws administered in Washington for the benefit of the worker. Charts outlining the provisions of workmen's compensation, minimum wage laws for women, and Federal labor laws applicable to the different classes of citizens, were explained through poster and bulletin.

Consumer Problems were illustrated by exhibits urging citizens to educate themselves to a real knowledge of the rating and value of different brands of food in order that they may gain greater power from the expenditure of every dollar.

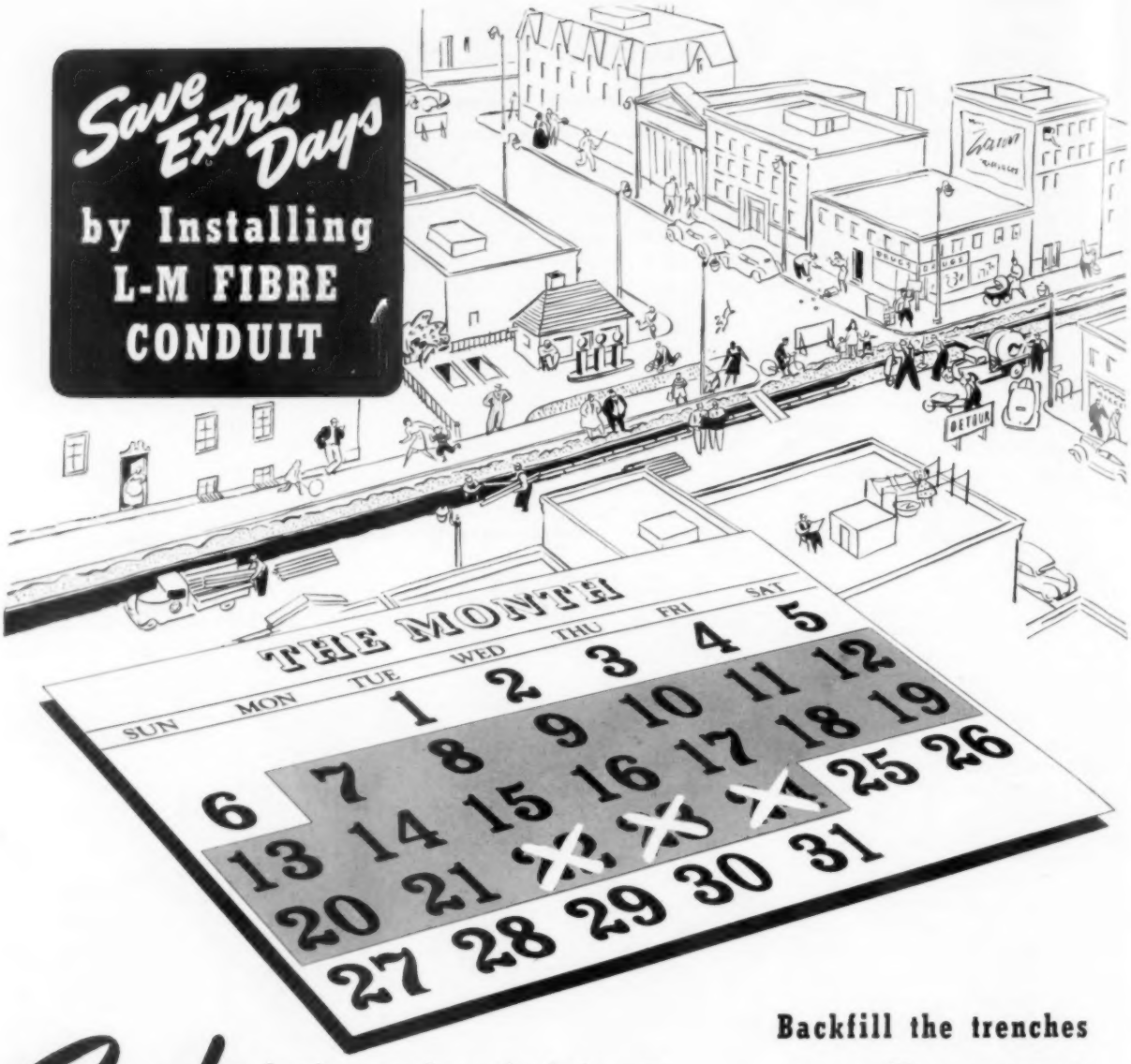
Education was shown through the facilities provided by schools and libraries. This exhibit demonstrated how well the citizen of Washington is served by outstanding facilities of both public and private libraries.

Housing pictured the accomplishments of the Alley Dwelling Authority and the several examples of public housing already completed in the city. Photographs illustrated many bad conditions in existence despite the recent housing developments, and proved that much work remains to be done to raise the general housing level.

Safety—at work, in the home and on the highway—was illustrated by poster and photograph. In a special chart warnings were outlined against various trouble spots in the home which might be the cause of serious accidents. Hazards in various industries were shown, and enlarged photographs presented new highways, elevated streets and clover-leaf in-

These views illustrate the position of markers at intersections in Montgomery, and one of the first markers to be laid down, with, left to right, City Engineer Roy Garrett, City Commissioner W. A. Gayle, and Officer J. W. Russell of the Police Traffic Department. The black line down the marker has since been abandoned for better visibility at night

Save Extra Days by Installing L-M FIBRE CONDUIT



Proof of saving extra days and reducing costs, is in the installation of L-M Fibre Conduit on your job. As other engineers, who specify L-M Fibre Conduit, you will experience the advantages — it's easy to carry, easy to handle — it lays faster because the length, bore, wall thickness and machined joints are uniform — its strong walls keeps breakage delays at minimum. Tight joints insure against the seepage of wet concrete, therefore the smooth inside surface is always free of foreign matters and the cable can be drawn through the ducts with ease. For economical and permanent protection specify L-M Fibre Conduit for your next underground cable installation.

Backfill the trenches sooner · Clean up streets sooner · Eliminate traffic detours sooner · Complete the job sooner with

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LINE MATERIAL COMPANY

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tersections as means of eliminating hazards to safety on the highway.

Public Welfare presented the various available aids for the needy old, the blind, and the delinquent children of Washington. Local services for child welfare and general relief outlined the alertness of Washington to its many problems in these fields.

Large posters acclaiming the advantages of the community chest were arranged along the central corridor of the exhibit hall, and various slogans and pertinent sentences were placed on the connecting walls between the booths to point up the general educational purpose of the exhibit. This presentation of the problems which beset Washington's citizens, and of the forces which have been organized to cope with them, has been a worthy attempt to arouse public consciousness to an understanding of the many District and Federal as well as civic and social service agencies which stand ready to lend assistance.

DORA A. PADGETT,
Librarian, American Planning and Civic Association.

The Behavior of Good Citizens Rewarded

KEOKUK, IOWA.—As a reward for their good behavior on the Fourth of July and Hallowe'en, the youth of Keokuk were invited by City Commissioners Harold C. Kiser and Harry L. Ayres and the Mayor to the eighth annual Christmas party, held on December 22 and 23 at the Grand Theatre. About 3,200 boys and girls of school age, representing public and parochial schools from kindergarten through high school, attended.

Keokuk was the first city in the United States to successfully inaugurate the safe and sane observance of these two holidays. Substituted for the wanton destruction of property that used to be the custom, the peaceful observance of these days has been instrumental in bringing a realization of better citizenship to Keokuk boys and girls. At the same time their fun and pleasure has not been taken away, but rather increased by a planned Hallowe'en function which they have enjoyed, besides the Christmas party.

The boys and girls of Keokuk have earned the reputation of being good citizens and have received favorable comment from the President of the United States, Senators, Congressmen and Governors of various states. The plan has grown in popularity since its inception in 1932, when the first party was given, and now 76 cities have followed Keokuk in its inauguration of the observance of these two holidays.

FRANK A. WILLMERING,
Mayor.

Scranton's Proposed Traffic Circle

SCRANTON, PA.—The large traffic control circle planned for Oak and Market Streets in the city of Scranton will be the first development of this kind in Pennsylvania under the State Highway Department. The cost of constructing the traffic circle and the links of the road that will enter it will be about $475,000.

The circle will have an inside diameter of approximately 300 feet. The pavement within the circle will provide for four lanes of traffic, having a total width of 48 feet; 12-foot traffic lanes around a traffic circle are considered desirable in view of the over-all length of trailers which now frequent our highways. The outside diameter of this traffic circle will therefore be equal to the inside diameter plus twice the width of the four lanes. This dimension of approximately 396 feet does not include the width of the shoulders outside the pavement.

As the legs of these intersecting highways approach the circle, traffic will be further segregated by islands, four in number. The islands will be surrounded with curbs and will be left in mound shape, on which vegetation may grow. The inside edge of the pavement around the traffic circle will also be marked by a heavy curb. The interior of the circle, 300 feet in diameter, will be graded, and soil will be provided to facilitate vegetation. The shoulder widths when approaching the circle will be made sufficiently wide on all sides so as to provide entire safety and to permit an unobstructed view of the circle when approaching it. Roadside beautification will be given every consideration at this traffic center.

In designing the details of the structure, considerable study is necessary to provide curvature and control of speed of the vehicles approaching the circle so as to permit a uniform speed within the confines of this rotary intersection. The safety of the design rests largely in super-elevating the pavement and in providing curvature in such a way that all traffic within, entering, or leaving the circle will be moving at a reasonable and fairly uniform speed to permit "weaving" of traffic without confusion or interference.

Proper warning and direction signs will be erected so that the traveler may intelligently sense, without any doubt, what he should do in maneuvering his car within the confines of the improvement.

RAYMOND B. GIBBS,
General Secretary, Scranton Chamber of Commerce.

Postage Meter System for Memphis City Mailing

MEMPHIS, TENN.—When citizens of Memphis receive letters from municipal offices hereafter, the envelopes will remind them: "Your Memphis Tax Dollar Is Your Best Investment." Saving one-third of that tax dollar, wherever set aside for postage, is the purpose of the metered cancellation of which this slogan is a part.

Under a plan inaugurated by Marvin Pope, Executive Assistant to the Mayor, Memphis has installed a postage meter machine to cut costs and expedite work. A central mailing station has been set up under supervision of the Bureau of Personnel and Efficiency.

Sealing and stamping in one operation, the machine handles 100 letters a minute. An employee from the mimeograph-addressograph division devotes a half-hour a day to duties as "postmis-

PENNSYLVANIA DEPT. OF HIGHWAYS
SKETCH SHOWING PROPOSED TRAFFIC CIRCLE AT INTERSECTION OF ROUTE 6 AND ROUTE 9 IN THE CITY OF SCRANTON - LACKA COUNTY

★

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ress," saving many hours weekly for personnel in the various city offices.

By eliminating three steps usually performed at the Post Office (facing, sorting by size, cancellation), the city speeds up dispatch of its mail. Besides conserving time and reducing postage costs about 33 per cent, the postage meter system will abolish the practice of using stamps from the city supply for personal correspondence.

Another advantage, by no means the least, is the favorable publicity obtained at no extra expense or labor by the use of slogans as part of the cancellation. Memphis will vary its slogans to advertise tax-due dates, fire-prevention campaigns, spring clean-up drives, the Cotton Carnival, Mid-South Fair, Spirit of Christmas Parade, and other events.

A porter collects mail from city offices at noon and 4 P.M., except on Saturdays, when one pick-up is made at 11:30 A.M. Offices may deliver special mail to the station at any time during the day. Departments occupying quarters outside City Hall send in their mail when convenient, but all consignments are handled at the hours set.

The city has purchased the Pitney Bowes machine, but leases the meter, which is controlled by the U. S. Post Office.

LOUISE GAMBILL,
Librarian, Municipal Reference Library.

18-*Hole Golf Course Replaces Inadequate Links*

ELMIRA, N. Y.—Elmira's new 18-hole municipal golf course, designed by Donald Ross, well-known golf architect, and constructed by WPA at a cost of $232,301, will be officially opened on May 15. Ideally situated about two miles from the center of the city, the Mark Twain Community Golf Course marks a long step forward from the original 9-hole municipal course that was its predecessor.

Despite its narrow fairways and rough greens, the small course, which was constructed in 1926, became the most popular recreation area in the city, and on week-ends and holidays was crowded beyond capacity. Therefore, in 1937, it was decided to build a new one. After the inspection of all passable sites within a 10-mile radius of the city, 225 acres of rolling terrain —the present site—was purchased.

Facilities of the course include practice green, starter's booth, caddy shelter, entrance road, parking area, pump-house, and four tennis courts. A water system has been installed, and 1,000 feet of Cyclone fence erected along the highway adjoining the course. A two-story brick pavilion (built at a cost of $23,933) houses dressing rooms, shower rooms, a pro shop and living quarters for the pro. Another brick building, of fireproof construction, built at a cost of $6,656, houses mowers, rollers and other maintenance equipment.

Municipal Golf Links, Elmira, N. Y., and Garage and Storage Building

Revenue resulting from the operation of the first nine holes last summer was sufficient to meet all operating expenses. The fee schedule calls for an annual fee of $15 for residents and $20 for non-residents. The greens fee for residents is 50 cents except on Saturdays, Sundays and holidays, when a fee of $1 is charged. Non-residents pay a $1 greens fee at all times.

The course will be operated by an advisory committee of seven members appointed by the city manager.

BART J. SCANLON.

Free Parking Lot Aids Shoppers; Facilitates Traffic

CAMDEN, N. J.—Shoppers in the South Camden business district are saving time and avoiding scratched fenders and other parking worries, and a knotty traffic problem in a congested area has been cleared up, with the opening of a free city-sponsored parking lot on the site of an old car barn.

The lot was obtained by the cooperation of several different groups. The original request was made by the Kaighn Avenue Business Men's Association, which appealed to the Camden Chamber of Commerce. Chamber officers interviewed officials of the Public Service Corporation, owner of the land, and headed a delegation of merchants who called on me to talk over the project. The site was obtained by the city with an agreement executed at the regular Commission meeting, whereby an annual rental of $1.00 is accepted by the Public Service Corporation for its use.

The lot is maintained by the Kaighn Avenue Business Men's Association, and taxes are paid by the Public Service Corporation.

GEORGE E. BRUNNER,
Mayor.

What Forward Steps Can Your Municipality Report?

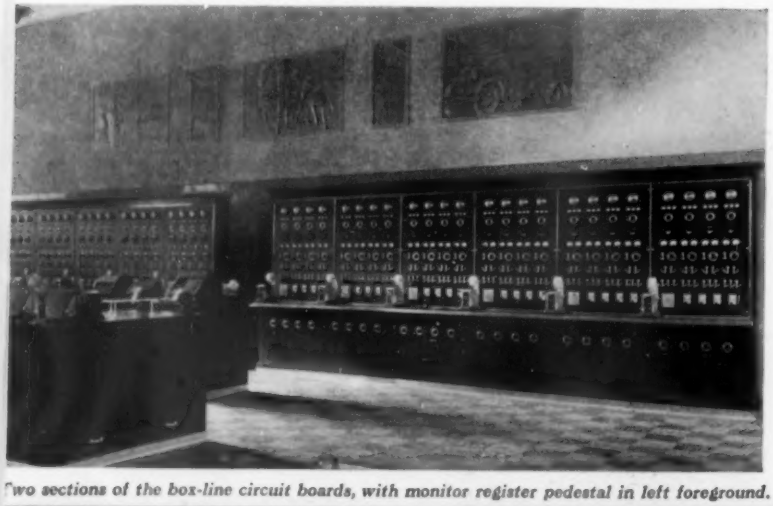
Through personal visits, correspondence, attendance at conferences and otherwise, the editors of THE AMERICAN CITY endeavor to keep constantly in touch with municipal improvements and progress in local government administration throughout the United States. The field is so vast, however, that dependence must be had in part on items and data coming spontaneously from municipal officials and civic organizations able to report "forward steps" embodying ideas of interest to other municipalities.

If your city, town or village has information of this kind to report, will you not send a brief statement of the facts addressed to:

Editorial Department,
THE AMERICAN CITY,
470 Fourth Avenue, New York

CINCINNATI SAFEGUARDE

Central office headquarters of the new fire alarm signaling system, Cincinnati, Ohio.



Two sections of the box-line circuit boards, with monitor register pedestal in left foreground.

. . . by new, split-secon
fire alarm syste

To safeguard the City of Cincinnati, the nation's swif est, most modern fire signaling system is now bein completed. It includes a newly equipped central hea quarters station, 72 box circuits, 12 alarm circuits, an 15 split-second Teletype alarm circuits.

The most modern of Horni tape indicating regist equipment in central headquarters and engine hous provides unexcelled dependability, new convenienc new safeguards against error or delay. Then in add tion, each of the city's 36 fire stations will be serve by a high-speed Teletype printer. *Within 8 second* after the automatic transmitter goes into action, engi house personnel know the location of the fire. *Within 1 seconds,* written orders (a duplicate copy of the typ written alarm) are ready to be taken along as th equipment rolls.

Contracts for furnishing and installing central offic equipment, Teletype equipment, current supply co trol apparatus and accessories and for furnishing unde ground cable for this outstanding job were placed wit GRAYBAR, and GRAYBAR specialists assisted in plannin and supervising the job to assure trustworthy perfor ance.

If your own fire alarm signaling system requires e tension, modernization or replacement . . . why not l a GRAYBAR signaling specialist make a check-up?

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Traffic Control and Facilitation

Conducted by Publications Committee, Institute of Traffic Engineers, 60 John St., New York
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Hydraulically Operated Dividers Adjust Lanes to Traffic Flow

A New Device of Traffic Control Which Increases a Street's Capacity by 53 Per Cent

By Otto K. Jelinek
Traffic Engineer, Chicago Park District

THE location of Lincoln Park on the sloping shoreline of Lake Michigan places it directly on the north-south axis of the Central Business District of Chicago. Forty per cent of the entire traffic entering this district comes from the north and uses Lincoln Park facilities.

The center of origin of that traffic has varied during the last twenty years from the territory immediately west of Lincoln Park to the territory north and northwest of it. The shift in origin was principally due to population shifts and the general let-down in mass-transportation facilities, as well as the development of the automobile.

The absence of suitable traffic facilities on city avenues led the majority of vehicular traffic to use the north Outer Drive Boulevard system, where better running time and safety of operation prevailed. As the vehicular volumes through the park grew, many traffic problems had to be solved, such as the matter of directional traffic during the morning and evening rush hours, the lack of concentrated and distributional parking, the poor efficiency of flow, the poor distribution of volumes, the high accident rate, the large number of cross interferences (nine major—three minor), the lack of segregation of through and local vehicles, the lack of channelization at key points, the dangers of pedestrians crossing the drives, excessive running time, and the inconvenience and annoyance of these to the public.

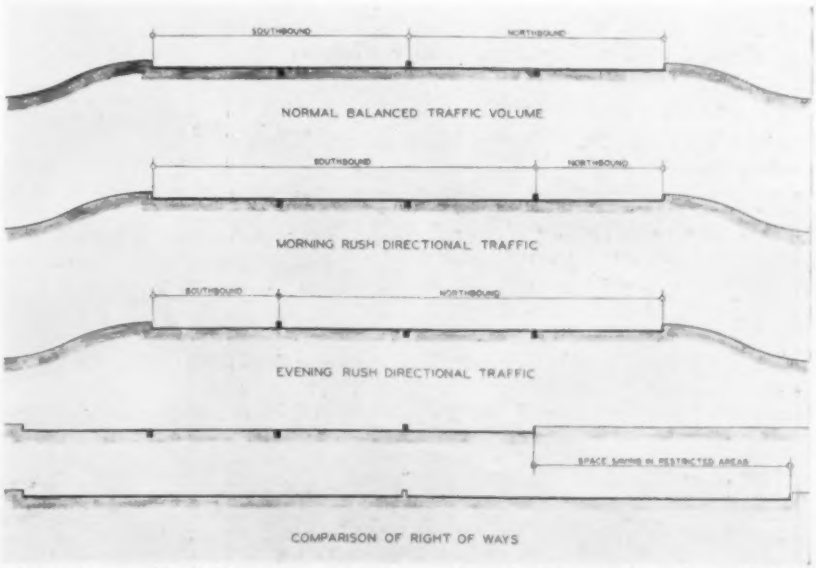
The year 1935 inaugurated a general revision of traffic operation in the park, which provided capacity for directional traffic by special routings during the rush hours; provided a balanced distribution of traffic during normal hours by one-way routing; practically eliminated all cross interferences; established a partial segregation of vehicles; provided channelization where required; reduced pedestrian dangers; reduced accidents 30 per cent; reduced running time through the park by six minutes; and restored the pleasure of driving in the park.

The principles so successfully demonstrated by these operations were used as a basis for the present construction program of modernizing areas and drives in Lincoln Park, now nearing completion.

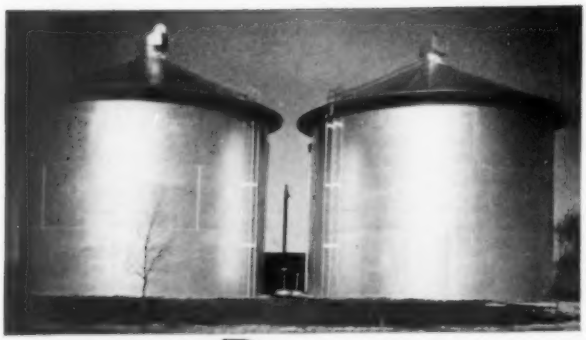
The present area of the park, now cut up by many drives into many small parcels of no recreational use, will be combined into a usable whole, through the elimination of many of the drives that now subdivide the land. Drives will fall into two classes: (1) a drive for the through type of vehicle which takes the park for the sake of convenience; and (2) a drive for the local type of vehicle choosing the park because of its many attractions.

The local drive, incorporating revisions to the present winding Stockton Drive, will connect to portions of Lake Shore Drive pavement that have been retained, and will hook up to a new local drive east of the through drive under grade separations at North Avenue, Fullerton Parkway, Diversey Parkway, and Belmont Avenue, thus practically forming a ring around the park. Through traffic of any sort will be discouraged from using these drives by special intersectional treatment at all access points from the west side of the park, and by the introduction of many curves and turns not conducive to through travel. *Parking will be permitted* at all locations on the local drive and will be either of the concentrated or the distributional type depending on the areas.

The through drive approximately following the line of the present Beach Drive, will be fairly straight, having curves exceeding a 4,000-foot radius, 100 feet wide, with definite points of grade separation access, and eight wide



With the movable dividers or fins, the upper roadway is wide enough; without the fins, the low width of roadway would be necessary



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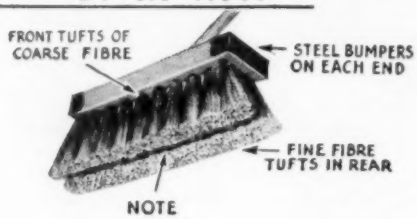

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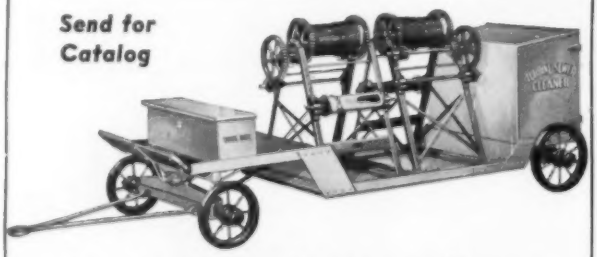

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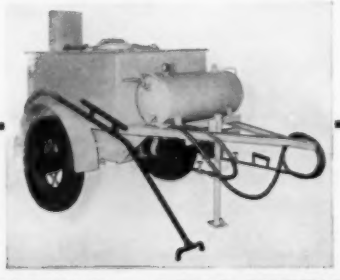

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lines that may be adjusted to directional traffic use by *movable capacity-providing divisional fins,* pedestrian overhead crossings where required, and many other innovations in traffic control that will make it the safest and most efficient type of highway now known to traffic engineers.

Divisional Fins

The divisional fins are especially worthy of note because a 170-foot width of drive would have been necessary in place of the 100-foot now under construction, had the fins not been adopted. The estimated savings in right-of-way value alone run into large figures; but saving the costs of additional paving, structures, lighting, maintenance, and the elimination of operating difficulties, amounted to twice the cost of the fins.

The movable dividers on the 2.2-mile through drive consist of three parallel lines of fins running longitudinally in the roadway and arranged so that by raising and lowering the lines of fins the roadway can be arranged in several combinations of traffic lanes. Each line of fin consists of a series of movable fin-units set in a trench. Each unit is a structural steel box approximately 20 inches wide, 16 inches deep and 25 feet long. In the lowered position its top is flush with the roadway surface. By means of hydraulic jacks and the hydraulic pressure system, these fins will be raised to project 8 inches above the roadway surface, thus producing a continuous barrier between the traffic lanes. Return of the fin to the lowered position is accomplished by the release of the hydraulic pressure and by the action of springs.

Hydraulically Operated

The fins are moved by hydraulic power derived from pressure storage tanks containing hydraulic fluid and gas under pressure varying from 1,800 to 2,400 pounds per square inch. These pressure storage tanks are located in the center trench of the roadway and have capacity sufficient to contain hydraulic energy for one complete movement of one line of fins. Sump tanks located in center have capacity for all the fluid when all the fins are in the lowered position. The piping of the hydraulic system is of sufficient capacity for the transmission of the hydraulic fluid from the storage tanks to the hydraulic jacks, and from the jacks to the sump tanks, without excessive pressure drop.

In operating this system, the up position of the fin depends upon the density and direction of traffic during the various periods of the day. In the morning rush hours, when the traffic flow is toward the central business district, the east line of fins is raised, thereby separating the roadway into six lanes for southbound traffic and two lanes for northbound traffic. In the evening rush period, when the prevailing traffic is away from the central business district, the west line of fins is raised, thereby separating the roadway into six lanes for northbound traffic and two lanes for southbound traffic. Between the morning and evening rush hours, when there is an even balance of flows, the center line of fins is raised in order to separate the roadway into equal parts. The raising and the lowering of the fins is controlled by the operation of switches from the control boxes which are located at the two extremities of the system.

The entire system is broken down into divisions, and each division is provided with pressure and sump tanks, a pumping station and the hydraulic piping to the jacks for the fins in the division. Also, each division is connected to the adjacent division by hydraulic piping for the continuity of control and operation. Further, each division is divided into two sections, so that during the raising operations all fin units within the section rise simultaneously. The time required to raise each individual section is approximately ten seconds, with provisions made for adjusting this time to any valve between ten to fifteen seconds by changing the sizes of the openings in the orifice plates of the hydraulic jacks.

To raise any line of fins, the operation of the control starts the raising of the section nearest to the control station, and when this section has reached a predetermined height, the second section is started by the opening of a valve controlled by mechanism operated by the travel of the first section. Successive operations of the following sections are started in a like manner, thus accomplishing a wave motion in the raising operation of any line of fins. The travel of this wave is approximately 20 miles per hour, based on the raising time of 10 seconds for a fin section.

Lowering of the fin is controlled by switch operation from the control station, and the lowering of any line of fins is practically simultaneous for the entire line. The time required for lowering is adjustable between 10 and 20 seconds. Provisions are made so that all lines of fins may be in the lowered position at one time, or so that all three lines may be in a raised position at one time.

The fin itself is made of ordinary ½-inch structural steel, finished by a process, having aluminum painted federal yellow on the sides and unpainted zinc on all other metal surfaces. The sides are further equipped with bull's-eye type lighted lenses so that the fin may be identified in the up position at night. The wearing surface is of white concrete, 3½ inches thick and reinforced with mesh.

The Chicago Park District Commissioners, in adopting and going through with these plans, do so through the progressive leadership of their President, R. J. Dunham, and under the engineering guidance of Chief Engineer Ralph H. Burke, and, finally, the drive of James P. Gallagher, the Principal Construction Engineer. It is with gratitude that the traffic engineers of the Park District, as well as the entire profession, look to these men in carrying out these ideas and designs.

The divisional fin is the result of ten years' study and testing, both as to the principles of operation and as to the mechanical device itself. Photographs in the April issue will show a test section of the fin and also the general principles of operation.

The principal use of this device will be on an avenue having restricted rights-of-way and carrying directional traffic to and from the central business district. Hal Foust, in the *Chicago Tribune* of December 24, 1939, said in an article captioned "Disappearing Center Curb to Cut Super-Highway Costs":

> "The Chicago Park District is advertising for bids for the construction of a novel center curb appearing and disappearing at the press of a button, which might cut $25,000,000 or more from the cost of a comprehensive super-highway program for Chicago sponsored by Mayor Edward J. Kelly, estimated to cost $205,000,000. Its employment throughout the system would minimize the amount of land and buildings that must be condemned for right-of-way."

We have not checked the accuracy of this quotation, but we do know that tremendous savings are possible in right-of-way costs, structure and pavement costs, and in general maintenance costs, such as repair, lighting, snow removal, and traffic control.

This type of divider or fin may be used either on surface or on elevated or depressed super-highways. Various possible treatments have been worked out to allow turn movements on surface routes that serve to reduce and simplify the total number of interferences possible under present-day turning methods. It thus has a potential use when the horse-and-buggy street patterns of cities are simplified to a new standard of vehicular use.

Photographs of the principle of the divisional fin will be shown here next month.

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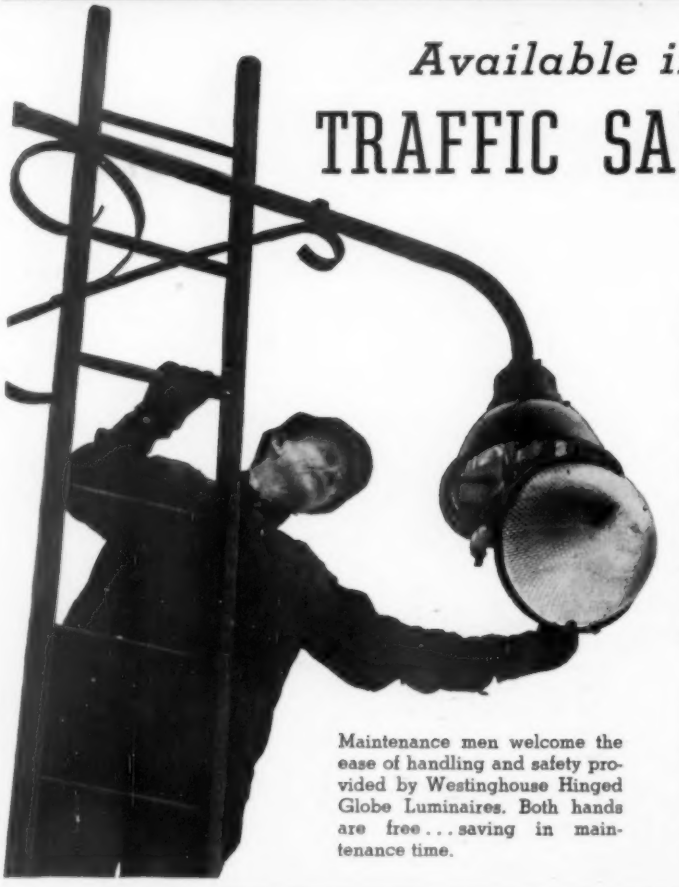

Maintenance men welcome the ease of handling and safety provided by Westinghouse Hinged Globe Luminaires. Both hands are free . . . saving in maintenance time.

Now low cost maintenance and servicing are assured in Westinghouse Traffic Safety Lighting Equipment. In the new Hinged Globe Refractolux and Reflectolux Luminaires practical economies in upkeep go hand in hand with the already established scientific principles that provide maximum night driving visibility.

A quick, one hand operation opens or closes the hinged globe leaving both hands free for maximum convenience and safety during servicing operations. Glassware is supported by a die-cast globe holder, hinged at one side and locked by the exclusive Westinghouse Toggle Latch on the opposite side. When fully opened the globe holder may be lifted from the hinge seat (without the use of tools) to facilitate glassware replacements right on the job.

Waterproof felt gaskets between globe and globe holder and between globe holder and reflector make units weatherproof and dust-tight.

These low cost maintenance features are available on Refractolux and Reflectolux Luminaires for Low or High Voltage circuits including the new Westinghouse Universal Line of Metal Hood Luminaires for system standardization.

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Westinghouse Low Voltage Reflectolux Luminaire (left) with rigid, die-cast globe holder swung open on the sturdy reflector hinge. Glassware replacements too can be made quickly "right on the job."

The Westinghouse High Voltage Refractolux Luminaire is equipped with a single element Refractor providing lateral control of light. Units are available for High Voltage circuits with either porcelain or metal heads.

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A New White Way on a Difficult Street

By ALBERT H. CHAPMAN
Chairman, Lighting Committee, East Sixty-Third Street Council, Chicago, Ill.

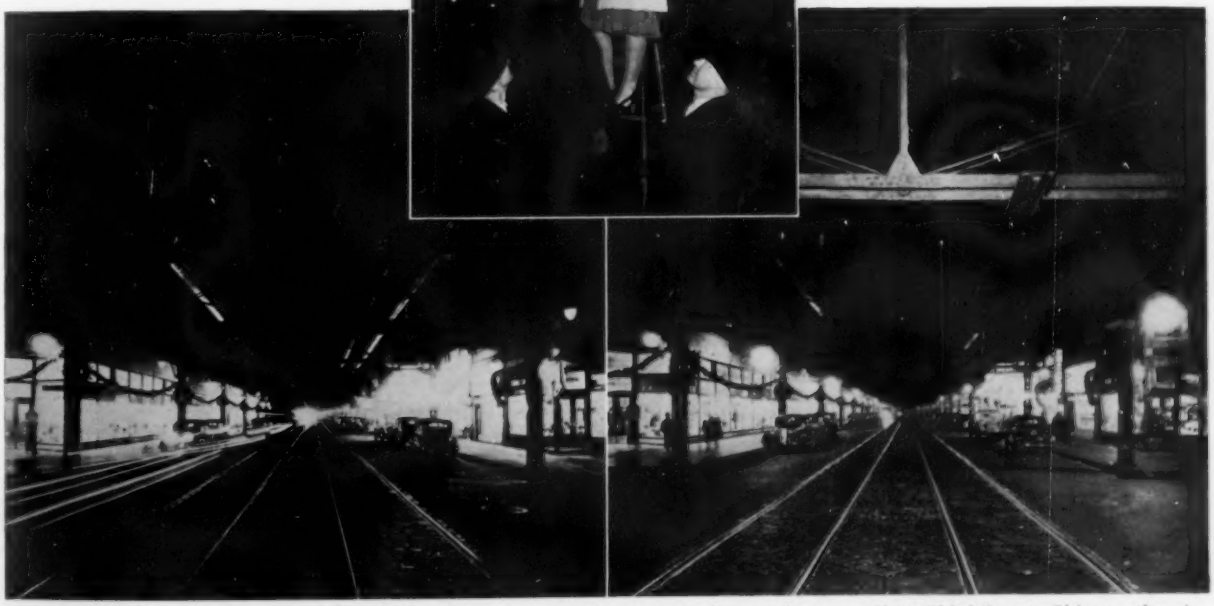
EAST Sixty-Third Street, Chicago, at last has a white-way system which not only adds to the attractiveness of the stores but also makes driving under the elevated-railway structure much more agreeable and safe. The Sixty-Third Street Council started its drive for the improvement early in 1937, and won it because the business men agreed to finance it—the longest (¾-mile) privately owned street-lighting system in Chicago.

The city's old system of 212-watt units still burns between the new luminaires, each containing one 1,000-watt and two 150-watt incandescent lamps. The 90 modern General Electric 81-S luminaires 17 feet above and 3 feet over the sidewalk were erected and are maintained and operated by the Commercial Light Co. at a cost of $75,000 for five years. The brackets are fastened to alternate posts of the elevated structure.

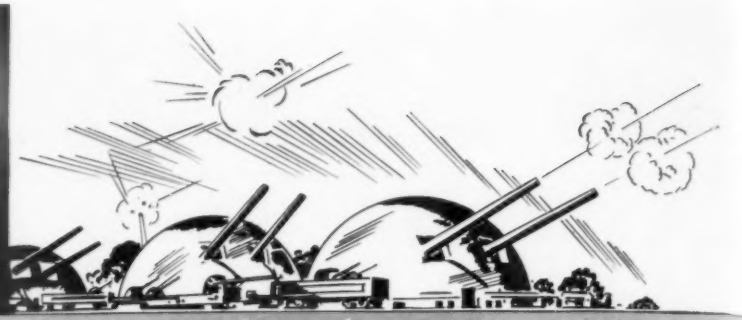
The privately owned system burns every night from dusk until 11 P.M. except Saturday, when it operates until midnight. The municipal lighting system operates from dusk until dawn.

The lighting contract between the property owners and business men of Woodlawn (another name for East Sixty-Third Street) and the Commercial Light Co. provides that the new system shall become the property of the East Sixty-Third Street Council at the end of five years. During that time, the company provides electric current, replaces lamps, washes and cleans the globes, paints the light brackets yearly, and provides liability insurance.

The actual turning-on of the new Woodlawn lights on January 18, 1940, was reminiscent of carrying the sacred Olympic fire in days of old. At a signal, two members of the University of Chicago track team raced toward the ceremonial reviewing stand carrying lighted torches. At each intersection, the lights were turned on behind them. As the runners reached their goal, Woodlawn's "Spirit-of-Light Girl" (Miss Isabel Clerk) handed her magical wand to Constance Bennett, who waved it— and the final block sprang into light, bringing to East Sixty-Third Street a new white way six times as bright as the municipal system.



Because the existing municipal street lighting, at left, was unsatisfactory to the merchants on Sixty-Third Street, Chicago, they installed an auxiliary system, with results indicated at the right; above is the type of luminaire



THE MAGINOT LINE IS SAFER THAN AMERICA'S "MAIN STREETS" AFTER DARK

WE ARE at peace, yet this country's 1939 night traffic fatalities on main thoroughfares far outweigh military losses to date among the forces stationed in France's Maginot Line. The reason—our defences against darkness are both weak and inadequate. The remedy—modern street lighting.

In 1940, as during the past 34 years, Union Metal Steel Standards are identified with the best in street lighting equipment. Increased mounting height, all-steel construction, modern designs—these and many other exclusive Union Metal features insure a line of standards that make for greater lighting efficiency as well as an economical, long-lived and attractive installation.

The services of experienced Union Metal engineers are available to those interested in street lighting modernization. Write today for complete details.

THE UNION METAL MANUFACTURING CO.
CANTON, OHIO

PHOTOGRAPHS BY COURTESY OF LINE MATERIAL COMPANY

Day and night begin to look alike in Austin, Texas; new lighting on 14 blocks of Sixth Street

Texas Capital's Famous Lighting Is Being Improved

By Guiton Morgan
City Manager, Austin, Texas

ALONG with its tower lighting system, unique for forty-four years, the city of Austin, Texas, has energetically improved its street lighting nearer to the earth. As the city grew—47 per cent in population in ten years—it spent $31,000 for new lighting on Congress Avenue, replaced the old central poles on Guadalupe Street with a boulevard lighting system costing $15,000, and relighted the 29 165-foot towers with 400-watt mercury lamps costing $6,000. The current improvement is the relighting of Sixth Street and San Jacinto Boulevard—$60,000.

The larger of these two installations consists of 35 blocks of Line Material pendant Controlite luminaires on Union Metal standards, along 60-foot San Jacinto Boulevard. The 132 6,000-lumen lamps are mounted at 22⅔ feet on fluted steel and spaced 110 feet apart in staggered arrangement. The second installation is of similar equipment for fourteen blocks of Sixth Street. The mounting height is 22 feet and the spacing is 92 feet; 28 of the units are opposite and 40 are staggered. The lamps are 15,000 and 10,000 lumens, on 2-foot ornate brackets.

The city has found the pendant-type lamps much more efficient than the upright type used in older systems over the city. As a comparison, Guadalupe Street is the same width as San Jacinto Boulevard, and the spacing of the lighting units is about equal on these streets. The Guadalupe units are the upright type, using 10,000- and 15,000-lumen lamps, and the San Jacinto units use only 6,000-lumen pendant lamps, yet the light intensity on the San Jacinto roadway is far greater than that on Guadalupe Street. It is probable that the upright lamps now used on many of the Austin streets will be replaced in later years by lamps of the pendant type. Future extensions will also give preference to the pendant-type lamps.

Municipal Electric Plant

As the capital of Texas and owner of a municipal plant that furnishes free power for street lighting, Austin is in a particularly favorable position to demand and obtain the best in street lighting. This steam plant has a capacity of 22,000 kw, a maximum load of 13,700 kw, and 19,600 customers, and is not in competition with the private utility. During the last six years $300,000 has been spent for a 7,500-kw turbo-generator and switchboard, fire-prevention apparatus, and heavier conduits. During this period, $929,000 was spent on the distribution system to improve voltage and electric service. This distribution work includes an 11,000-volt underground system in the business district requiring thirty 300-kva and six 500-kva transformers, and line extensions involving 4,822 poles, 677,000 pounds of copper wire, and thousands of cross-arms, insulators and other line accessories. The new street lighting on Sixth Street and San Jacinto Boulevard required four 30-kw constant-current transformers, three remote-control oil switches, and three Sauter time switches.

Electric rates have been reduced 42½ per cent since 1934. The domestic rate is 6 cents for the first 30 kwh, 3½ cents for the next 50, 2 cents for the next 200, and 1½ cents thereafter. The gross profit in 1938 amounted to $919,284. The value of free service to the municipality amounts to $402,000 in cash donations and $67,000 in free service.

Three reductions in five years in electric rates does not mean, of course, that further reduction should not be made. As the median line of consumption decreases, and as volume of production increases, the City Council has been—as always—committed to a policy of further reductions as the economies of the city will permit.

San Jacinto Boulevard for 35 blocks is lighted by Controlite luminaires 22 2/3 feet high

UNUSUAL HAZARDS *are made* UNUSUALLY SAFE *with* HOLOPHANE REFRACTORS

HOLOPHANE REFRACTORS not only shape the light to the *street*, but also shape the light to the *purpose*. . . . For example, the underpass above was given special study and treatment so that the roadway, sidewalk and concrete pillars received almost daylight lighting. Whatever the street lighting problem Holophane Refractors produce maximum results, with multiple economies and a minimum of waste. Write for details.

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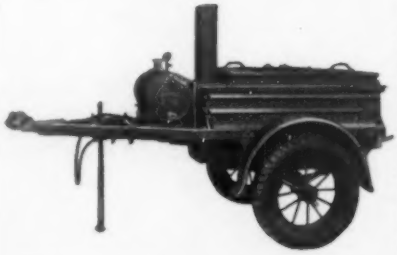
Write today for information on this profitable tool.

GIANT MANUFACTURING CO. Dept. P Council Bluffs, Iowa



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Theo. DeWitt, President — DeWITT OPERATED HOTELS — R. F. Marsh, Vice-President

The hotels that check with every travel standard

Safety with Sodium

BEGINNING WITH THREE sodium-lighted intersections in 1936, the city of Los Angeles has since lighted more than 125 additional intersections, at crossroads outside population centers as well as in strictly city areas. The successful results in reducing accidents are illustrated by the accompanying tabulation of experience before and after installation of sodium lights at 25 intersections, where fatalities were wiped out and other accidents reduced 75 to 86 per cent. (See table below.)

The characteristic golden light of the sodium lamp has become a dual signal —as a warning and as a promise of agreeable driving. It is being used also on urban traffic arteries such as attractive Kanawha Boulevard at Charleston, W. Va., shown above.

FRED D. CROWTHER,
Illuminating Laboratory, General Electric Co., Schenectady, N. Y.

Charleston, W. Va., Bypasses Traffic on Kanawha Boulevard

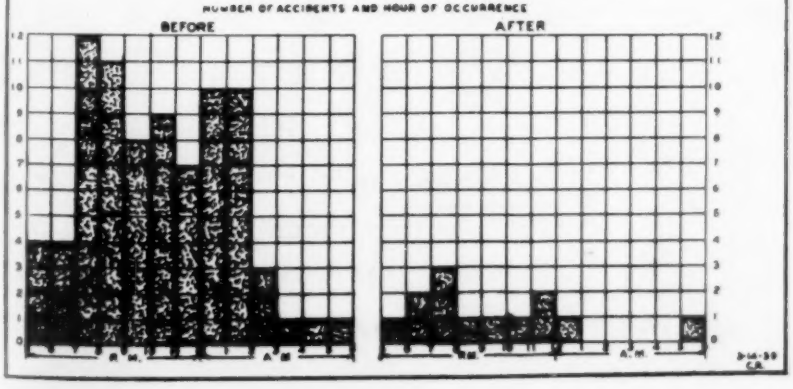
Follow the Yellow Lights

THE EAST'S longest stretch of municipal bypass sodium lighting will be in operation soon on five miles of Kanawha Boulevard in Charleston, W. Va. It provides safe night driving for motorists, and directs the itinerant motorist through the city without confusion and loss of time. Charleston is believed to be the first city in the East to use this distinctive type of illumination on a bypass thoroughfare from city limits to city limits.

Advantages of this type of illumination readily became apparent to the motoring public and city officials of Charleston after an initial installation of 44 sodium units along the central part of the Kanawha Boulevard in 1939. These General Electric luminaires are of the open type with horizontal reflectors and 10,000-lumen lamps burned in a horizontal position. The 190 new luminaires are mounted on Union Metal poles staggered along the Boulevard 100 feet apart and mounted 25 feet to light center.

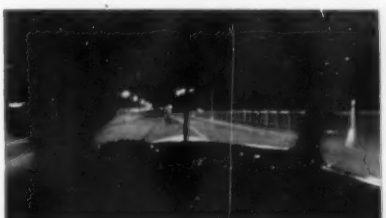
D. BOONE DAWSON
Mayor, Charleston, W. Va.

LOCATION	DATE OF INSTALLATION	EQUAL TIME IN DAYS BEFORE AND AFTER INSTALLATION	ACCIDENTS BEFORE	ACCIDENTS AFTER	INJURIES BEFORE	INJURIES AFTER	FATALITIES BEFORE	FATALITIES AFTER	CITY PROPERTY DAMAGE BEFORE	CITY PROPERTY DAMAGE AFTER
LINCOLN & SEPULVEDA BLVDS	10-29-37	502	8	19	1	-	1	-		
EFFIE GLENDALE & ALLESANDRO	7-9-37	613	6	4	3	-	-	2		
IMPERIAL & VERMONT	8-10-37	581	5	10	-	-	-	-		
ROSECRANS & FIGUEROA	7-22-37	600	4	7	1	-	-	-		
VISTA DEL MAR & OCEAN VIEW LN.	4-14-36	1064	4	9	1	-	-	-		
SAN VICENTE & LA CIENEGA	8-23-37	569	3	3	-	-	-	-		
101ST STREET & FIGUEROA	7-29-37	593	3	6	-	-	1	-		
REDONDO BEACH & FIGUEROA	8-13-37	578	2	4	-	-	-	-		
ROSECRANS & VERMONT	7-23-37	600	2	3	-	-	-	-		
TEMPLE & VIRGIL	12-1-36	824	2	-	-	-	2	-		
LOS FELIZ & WESTERN	4-9-37	704	1	1	-	-	-	-		
ANAHEIM GAFFEY & VERMONT	8-20-37	572	1	1	-	-	-	-		
REDONDO BEACH & VERMONT	9-10-37	550	1	4	-	-	-	-		
SANTA BARBARA & LEIMERT	10-11-37	519	1	-	-	-	1	-		
CAHUENGA & MULHOLLAND	8-25-37	567	4	3	8	4	-	-		
COLORADO & EL MODENA	10-23-37	508	3	-	4	-	-	-		
WILSHIRE & L A COUNTRY CLUB	8-1-37	559	1	-	4	-	-	-		
BROOKLYN & LORENA	10-4-37	527	1	-	-	-	1	-		
SAN FERNANDO RD & VAN NUYS	7-8-37	614	10	1	12	2	2	-	2	-
SAN FERNANDO RD & SUNLAND	7-8-37	614	4	3	2	2	-	-	3	1
SAN FERNANDO RD & OSBORNE	7-8-37	614	4	1	6	2	1	-	-	-
SAN FERNANDO RD & ROXFORD	7-8-37	614	4	1	8	1	3	-	-	-
SAN FERNANDO & WELDON CANYON RDS	7-8-37	614	3	-	8	-	-	-	-	-
SAN FERNANDO RD & VINELAND	7-8-37	614	2	-	5	-	-	-	-	-
SAN FERNANDO RD & LANKERSHIM	7-8-37	614	2	-	2	-	-	-	1	-
	TOTAL		81	13	128	13	12	-	12	3
	PERCENTAGE DECREASE		84%		88%		100%		75%	



Making Night Attractive and Safe

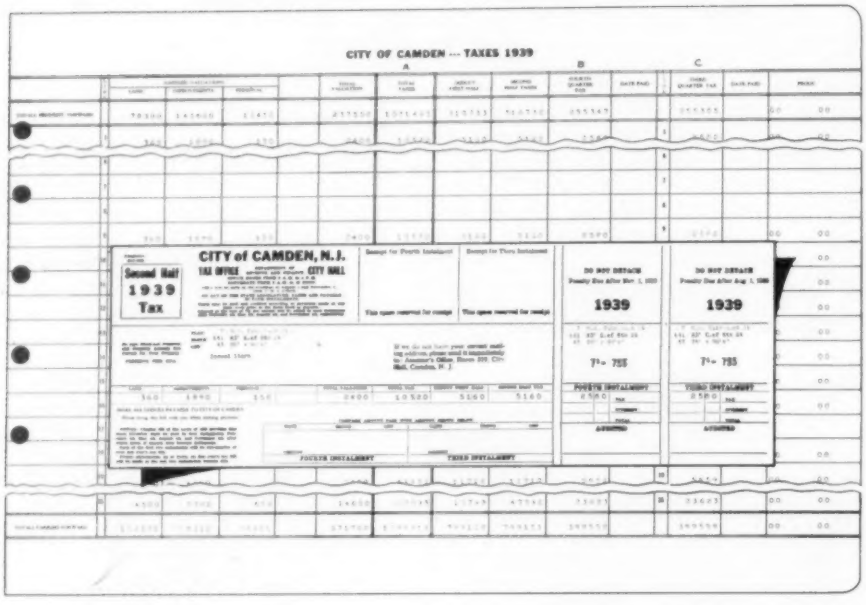
THE IMPORTANCE OF STREET LIGHTING has risen greatly in the estimation of municipal officials in the last few years. Instead of being regarded as something to be added to the city at night, it has come to be the night itself. For what would night be in a city without outdoor lighting? When that lighting is inadequate, the night is depressing and dangerous. When the lighting is fine, as at Niagara Falls, N. Y., and Greensburg, Pa., it increases the enjoyment of being out at night.

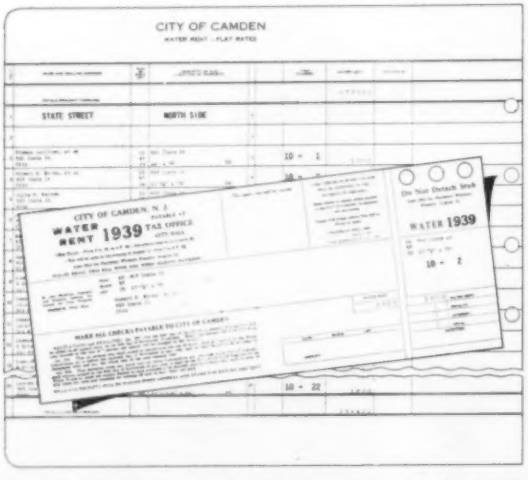


The above photograph shows from the driver's seat the lighting conditions on Cleveland's $7,200,000 Main Street bridge, described in THE AMERICAN CITY by R. L. Biesele, Jr., of the Westinghouse Electric & Manufacturing Co., in December, 1939. Mr. Biesele pointed out that this lighting was regarded as an integral part of the bridge design, which it should be.

ONE Machine Does It All!

WATER BILLING — TAX BILLING — BUDGETARY ACCOUNTING





The Machine

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City Comptroller

S. P. McCord

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Many municipalities large and small now use the SUNDSTRAND CLASS D accounting machine for the same reasons given by the City Comptroller of Camden, N. J.

Improving Municipal Administration

Current Items from the Public Administration Clearing House

Few Cities Have Developed Revenues to Meet Increased Relief Costs

FEW CITIES HAVE BEEN ABLE to develop new sources of revenue to match increases in local relief and emergency employment costs during the last ten years, the Municipal Finance Officers Association of the United States and Canada reported last month. The report was based on a study of relief finance methods of more than 50 cities.

Only four of the cities—New York, San Francisco, Grand Rapids, Mich., and Erie, Pa.—used special sources of revenue to any extent to finance their relief programs, the study showed. Almost all the other cities used regular tax receipts to pay for direct relief and their share of Work Projects Administration and Public Works Administration costs.

Different methods of financing the local share of relief costs were noted by the Association in its survey. Most cities used tax-supported bonds for their share of PWA projects, which included large public buildings and utility facilities. In most cities, also, a substantial part of general relief funds came from regular taxes.

Louisville, Ky., for example, financed direct relief and its share of WPA work with regular taxes, while utilizing tax-supported bond issues for large PWA projects. Baltimore annually has financed from 30 to 35 per cent of direct relief and all of its share of PWA costs from bond issues, but has paid its share of WPA expenses from regular taxes.

New York City became the great exception to the general practice when, some years ago, it adopted a policy of financing as much as possible all types of relief from current revenues. In 1939, the city paid 85 per cent of the cost of its three types of relief from current revenues, obtained mostly from municipal sales, cigarette, business, utility and conduit taxes. New York City used new tax sources or other special methods to pay 60 per cent of its relief bill in 1938, 97 per cent in 1937.

Grand Rapids financed 55 per cent of its relief load in 1939, 27 per cent in 1938, and 10 per cent in 1937, from special sources. Its share of WPA costs was obtained from Water Department funds, special assessments, an estate left the city, and salvage of street-car property. It financed PWA for 1935, 1936 and 1937 with water-works funds, and in 1939 by a water-revenue bond issue. San Francisco obtained money from utility revenues, gasoline taxes and Golden Gate Exposition funds to finance 40 per cent of its relief burden last year.

The study showed that the larger cities and counties of California have generally been paying the entire local share of relief costs from regular taxes. Minneapolis, on the other hand, has financed the entire cost of all types of relief from tax-supported bond issues. In general, however, most of the large cities have followed no continuing policy either as to issuing bonds to pay for various types of relief or financing them from regular taxes.

Because most of the cities have not levied new types of taxes to finance their shares of the various relief programs, they have had to obtain money from traditional sources of revenue, or have had to curtail services, the Association said.

Motion Picture to Aid Law Enforcement

AN INCREASE in the use of motion pictures in the law-enforcement field—for educating the public, for instructing police officers, and for gathering evidence—is noted by the International Association of Chiefs of Police in endorsing the film, "Know Your Money," based on the detection of counterfeit currency.

This motion picture, prepared by the United States Secret Service, a division of the Treasury Department, is to be exhibited to police departments of the larger cities as well as to the public, and is designed to suppress counterfeiting through "education rather than persecution," the Association says. It is a motion picture "short" of the same educational qualities as "Drunk Driving," released to theaters recently and also endorsed by the Association.

Motion pictures have been put to a greater use as a means of training, however. They are being used by police and fire departments to instruct recruits, and by public health services of many cities in connection with various public health campaigns. An additional use of movies has been made by the Pittsburgh Community Fund for training volunteer fund solicitors.

Movies showing training procedures of the New York City, Milwaukee and Kansas City, Mo., Police Departments have been made within the last year, and are used in the training not only of recruits but of regular department members. The Milwaukee Police Department has made short movies of traffic officers in action, using the films later to call attention to the officers' good and bad points.

There has also been an increase in the use of motion pictures in the crime detection field, the Association says. California state and municipal police, for example, are using motion pictures in their campaigns against drunken driving and traffic offenders. Motorists suspected of driving while drunk are filmed by Fresno and Sacramento police at the station, and reckless drivers are photographed in action by cameras mounted on the windshields of California highway patrol cars.

Cities Need Building-Code Revision for Low-Cost Housing

IF CITIES WISH TO FACILITATE low-cost housing construction, many of them need to revise building codes that have not been changed in twenty years, a report by George N. Thompson, Chief of the Building Codes Section, National Bureau of Standards, to the International City Managers' Association points out.

About one-tenth of the 1,500 cities that have building regulations have not completely revised their codes for twenty years, and another one-tenth for fifteen years, according to surveys by the National Bureau of Standards.

"Current criticism of building codes centers on two points," the report says. "These are: requirements for excessive amounts of materials resulting in unnecessary costs; and failure to recognize desirable new materials and methods of construction. While some of the criticism directed at present codes results from misunderstanding the nature of building regulations and from a too-optimistic acceptance of all sorts of proposals, some of it is justified."

Building-code requirements, particularly for small structures, for example, continue to depend on requirements stated in terms of dimensions that are traditional in the building industry rather than on rational engineering analysis.

A "Short Cut" for the Busy Buyer

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RES. 1008

Geo. R. Johnston
CITY ENGINEER
MURPHYSBORO, ILL.

Nov. 1, 1939

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Sincerely yours
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City Engineer

Any manufacturer who does not use adequate space in the Municipal Index to illustrate and describe his products for municipal and water works uses is overlooking one of the most efficient means of gaining effective sales producing publicity.

THE MUNICIPAL INDEX
470 Fourth Ave., New York

Although building codes generally provide a procedure by which enforcement officials may permit the use of new materials, those officials often fail to do so simply because they do not know just how to test such materials, the report indicated. Eighty-three of 100 sample codes studied included provisions for the acceptance of new materials, usually by the municipal building official, by a board, or by the official and a board together.

To guide local officials in testing new materials, and thereby to make building economies possible, the American Standards Association, with the cooperation of the National Bureau of Standards, is developing standard techniques and procedures, the report states.

Floods or Flood-Control Programs Cause Four Cities to Seek New Sites

When the Citizens of Hill, N. H. —a town of 400 population—voted recently to move their community to a new location, they followed the example set by citizens of three other communities which, within recent years decided to relocate their towns to escape floods or aid in flood control. Two of the towns—Shawneetown, Ill., and Leavenworth, Ind.—already have moved to higher ground from the sites which, in 1937, were covered by Ohio River flood waters that almost completely destroyed many of their buildings. Greenville, Mo., is the other town; its present site has been designated as part of a St. Francis River flood-control reservoir system.

The citizens of Hill voted at a town meeting to relocate, and to establish a model village, after the Federal Government made known its plans for building a flood-control and water conservation dam which will flood the present site. With the assistance of the New Hampshire state planning and development commission, plans for a model town were drawn up and submitted to Hill's citizens. The plans were studied during several town meetings, and accepted when the residents voted to move to the new site.

State and Federal agencies assisted in planning the new Shawneetown, about three miles from the old location at the confluence of the Wabash and Ohio Rivers along the southeastern border of Illinois. The new town is oval in design, and no part is more than three blocks from the center. The main street is 100 feet wide, and a 30-foot parkway separates the street from the sidewalks. At one end of this street is the Gallatin County courthouse; at the other end, a community building. Parking areas are behind, instead of in front of, the stores. Houses that were not destroyed by the flood were moved to the new site, and the rest salvaged. Public buildings, for the most part, were built anew. Landowners received deeds to plots at the new town site, which was purchased by the state with $150,000 supplied by the State Legislature. The old site will become a state park.

Leavenworth's 450 residents moved to a bluff high above the old site, which had been flooded eleven times since the town was founded. State and Federal agencies cooperated in drawing up the town plan and relocating state highways. Work Projects Administration officials estimated the cost of streets, sidewalks, water and sewer systems, a town hall, and other construction at $125,000.

Many agencies are cooperating in moving Greenville from its present site to a new one about a mile up the highway. The Missouri State Planning Board is drawing up the new town plan, with technical assistance provided by consultants supplied by the National Resources Planning Board. Topographic maps of the new site were made by the United States army engineers. The town must be moved by 1941, when the new dam, to hold back waters of the St. Francis River from the Missouri River, is scheduled for completion.

City Manager Appointments

G. D. BOGUE has replaced Richard Forester as City Manager of Palatka, Fla.

Joseph A. Fogarty, City Manager of Newburgh, N. Y., from 1934 to 1935, has been reappointed City Manager.

James C. Harris, City Manager of Roxboro, N. C., since 1935, has been appointed City Manager of Hazard, Ky., to fill the vacancy created by G. W. Shaw's promotion to Hazard.

A. C. Stubbs has replaced O. Raymond Skiles as City Manager of Leesburg, Fla.

C. Leland Wood of Herkimer, N. Y., has been appointed City Manager of Watertown, N. Y.

Clarence E. Ridley,
Executive Director, International City Managers' Association.

The Municipal Bond Market

Recent sales of new issues from February numbers of *The Bond Buyer:*

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$300,000	Cook County, Ill., Forest Preserve District, Land Acquisition	1	3.85 Avg.	.96
100,000	Portland, Ore., Assessment Collection	1.70	3/10 Opt.	1.47
6,300,000	Erie Co., N. Y., Relief	1.90	1-10 Ser.	1.89
200,000	Lynnfield Center, Mass., Water	2	3-27 Ser.	1.95
142,000	Indianapolis, Ind., Flood Control District	2	11.75 Avg.	1.99
165,000	Bound Brook, N. J., Funding	2.25	8.25 Av.	2.22
150,000	Harlan, Ia., Electric Revenue	2.25	7-7.5 Avg.	2.24
100,000	Attica, N. Y., Sewer	2.25	16 Avg.	2.24
125,000	Phoenix, Ariz., Water Works Extension	3.75	16.66 Avg.	2.68
5,000,000	Mississippi, Highway	3.5	12.25 Avg.	3
20,000,000	Philadelphia, Pa., Gas Revenue First Certificates	3.5	3.66-9.33 O.-A.	3.12
720,000	Jersey City, N. J., Hospital	4	7.5 Avg.	4

Public Participation in Long-Term U. S. H. A. Financing

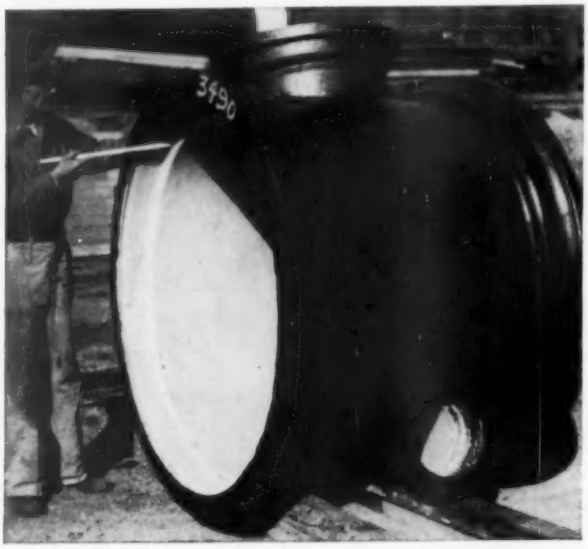
The following material appeared in the February 24 issue of *The Bond Buyer:*

Washington, D. C.—A new goal, planned for and anticipated for two years, has been reached in the USHA's drive to increase the participation of local private capital in slum clearance and low-rent housing projects when local housing authorities, for the first time, sold long-term bond issues last week to raise 20 to 25 per cent of the capital cost of projects instead of the minimum 10 per cent required by law. Interest rate on this private capital averages 2/5 of 1 per cent less than the rate charged for USHA loans.

Local housing authorities in the following cities, participating in this financing, and details of the sales, are:

	Amount of Loan by Private Capital	Period of Maturity	Per Cent Cost Furnished by Pri. Cap.	Interest Rate of Private Capital	Interest Rate on USHA Loan
Syracuse, N. Y.	$993,000	26 years	20%	2.48%	3%
Allentown, Pa.	342,000	26 years	20	2.57	3
Utica, N. Y.	242,000	27 years	25	2.70	3
St. Petersburg, Fla.	104,000	15 years	10	2.66	3¼

48" CEMENT-LINED C. I. FITTINGS



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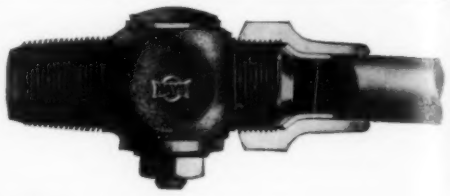

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THE RADIUS SEAL JOINT

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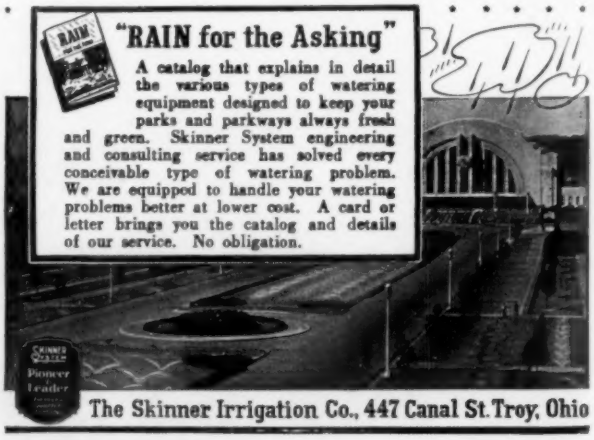

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Zoning and Planning Notes

With the cooperation of
EDWARD M. BASSETT
Author of "Zoning" and of "The Master Plan"

Zoning Ordinance — Residential District — Dog Hospital

IOWA.—*Crow v. Board of Adjustment of Iowa City*, 288 N. W. 145 (Supreme Court, October 25, 1939).—Dr. Crow, a veterinary surgeon, wished to construct an office and a hospital equipped for the treatment of dogs and smaller animals on his lot in a residential zoning district. The zoning ordinance of the city provided that "hospitals and sanitariums" could be erected in such a district. On the application of Dr. Crow for a permit, the Building Inspector obtained the opinion of the City Attorney that such an animal hospital could be erected in a residential district, and issued the permit. Thereupon Dr. Crow began construction of his hospital and spent considerable money on it.

Thereafter certain neighboring landowners objected to the building and appealed to the Board of Adjustment, which ruled that "hospitals and sanitariums as defined in the zoning ordinance do not include animals." Therefore the Board ordered the permit canceled and the work on the building stopped. Dr. Crow at all times acted in good faith. There is no indication that the building as planned would be a nuisance, and it is held by this Court that the revocation of the permit was illegal.

A building permit legally issued is more than a revokable license; and having been acted on and expense incurred in reliance on it, cannot be revoked. The question is, was the permit legally issued?

The ordinance is not unambiguous. The Building Inspector acted in reliance upon the opinion of the City Attorney. The ruling of the Building Inspector, therefore, was not clearly erroneous or without basis, and it therefore cannot be said that he was without right or authority to issue the permit. The building permit therefor was valid in its inception; it was acted on and expense incurred in reliance upon it, consequently the Board of Appeals acted illegally in revoking it.

Inflammables — Garage — Rules and Regulations

NEW YORK.—*Green Point Savings Bank v. Board of Zoning Appeals of Town of Hempstead*, Court of Appeals, November 28, 1939. Not reported.—This case, in a lower court, was summarized in our Notes for September, 1939, and should be there read in connection with the Ostrander case, as also there summarized. The Green Point case is an application for a permit for a gasoline station and storage tanks. Under the zoning ordinance of the town, such a structure may be erected in a business district "when approved by the Town Board." The town contends that this power in the absence of the setting-up of proper standards for its exercise, reserves to the Town Board the right to act arbitrarily, and is thus unreasonable and void. The lower court sustained this contention, and is overruled for so doing by this Court.

There is also in force in the town "an ordinance regulating the storing of inflammable materials." Such a regulation is well within the police power. In enacting its ordinance, the Town Board might have prohibited altogether a gasoline station in a business district. Instead, the ordinance did not prohibit, provided the use was approved by the Town Board, the legislative body which enacted the ordinance. This is not a case where it is necessary to set up standards to guide an administrative body; for here the power of approving the use was retained by the legislative body. Where the approval is thus lodged in the local legislative body, and where the matter is one which may endanger the safety of persons and property, like the storage of inflammable materials, as in this case, there need not be formulated standards, and the ordinance is constitutional.

The Town Board must act reasonably, and so long as it does so act, the courts will not intervene. Obviously in the exercise of this power, consent must be refused to those not entitled thereto. A license for a gasoline station may well be denied when next to a public school or in the heart of a business district where a fire would be most disastrous, and at the same time be granted in a suburb or in a less crowded district. The question in each case is whether the establishment of a gasoline station in a particular place or in a particular way would imperil the safety of persons or property.

Zoning Variance — Garage

NEW YORK.—*Aberdeen Garage, Inc. v. Murdock, Chairman, and others constituting the Board of Standards and Appeals of the city of New York*, 15 N. Y. S. 2d, 66. (App. Div., Oct. 27, 1939).—The Board of Standards and Appeals denied an application, on the ground of hardship, for an extension of an existing public garage by the construction of a new ramp, and other changes, and is sustained in so doing by this Court. The variation must do "substantial justice." "It would not require any great stretch of imagination to say that the petitioner purchased the property with the thought in mind of making the present application. Consequently it cannot well be contended that the restriction imposed by the resolution caused petitioner such a peculiar hardship that entitles it to the special privilege it seeks."

EDITOR'S NOTE.—The facts that should govern this decision in this case would seem to be, not the party that happened to own the land at any given time, but the nature and situation of the land itself. If this land may properly be used for a public garage, it would seem proper for the plaintiff, seeing this fact, to buy it and obtain a variance for its use for this purpose.

Zoning Ordinance — Residence Zone Abutting on Business Zone

OHIO.—*Central Trust Co. v. City of Cincinnati*, 23 N. E. 2d, 450 (Court of Appeals), February 6, 1939.—The fact that property adjacent to that of plaintiff was used for purposes consistent with regulations for business zones in which such adjacent property was located, could have no argumentative force in sustaining the claim of plaintiff that plaintiff's property should be included in a business zone on which it abutted.

It is obvious that zoning districts for different uses must have definite boundaries and that the property adjacent to the boundaries must be affected in some degree by proximity to that boundary. Such a situation is inescapable unless the whole of a community is to be placed in one unrestricted zone. Courts have therefore consistently refused to interfere with the sound discretion of those upon whom rests the responsibility of fixing boundaries of zones unless the exercise of this function is capricious, arbitrary or unreasonable.

In cases of unwarrantable hardship, relief may be had by appeal to the authority empowered to grant relief in such cases; but plaintiff, not having made such an appeal, is not entitled to such relief from this Court at this time.

Regional Plan Association Organized in New Jersey

At a recent meeting held for the purpose of forming a regional planning association for Raritan Valley, New Jersey, a temporary chairman was elected and empowered to appoint a committee to prepare a constitution and by-laws and to make nominations of officers.

Russell Van Nest Black, Director of the New Jersey State Planning Board, speaking at the meeting, pointed out that growth of the area is inevitable, but that if it is allowed to develop without planning, as platted at present—for a dense population, with inadequate streets, and no thought for future recreational development—it will lose its present desirable character. Other speakers were former Governor Harold G. Hoffman and Flavel Shurtleff, Sr., Counsel of the American Planning and Civic Association, and Dr. Robert C. Clothier, President of Rutgers University.

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Local Regulation of Canvassing

Two recent Supreme Court decisions recognizing forces pulling in opposite directions suggest reexamination of the problem of local regulation of house-to-house soliciting or canvassing. The more recent, *McGoldrick* v. *Berwind Coal Mining Company* (the New York City sales tax case decided January 30, 1940, by United States Supreme Court, 8 United States Law Week 206 and digested below) may possibly serve as a spring-board for extension of local regulations to matters heretofore assumed to be beyond the reach of local control because involving interstate commerce. The handbill decisions (*Schneider* v. *State of New Jersey; Young* v. *People of the State of California, Snyder* v. *City of Milwaukee,* and *Nichols* v. *Commonwealth of Massachusetts,* digested in The American City for January, 1940, at page 109), however, in non-commercial canvassing raise the question of whether the interest of individuals in being free to express political and religious views by handbills distributed from house to house is to be preferred to the interest of the occupant of the house to remain free from the annoyance of uninvited canvassing on his premises. If the handbill decisions are to be carried this far, a new restriction on the "Green River" type of local ordinance will have evolved.

The general theory relied upon to sustain the Green River type of ordinances is that in the adoption of regulations prohibiting house-to-house canvassing without the permission of the owner the city is acting to suppress a public nuisance. A man's house is his castle, in which he has a right to expect to remain free from annoyance. Where the annoyance results from a general condition involving the like welfare of all the members of the community, the use of the public power in suppressing the nuisance is justified. See *Town of Green River* v. *Munger,* 50 Wyo. 52, 58 P. (2d) 456 (1936) App. Dismissed 300 U. S. 638, reh'g den. 300 U. S. 688. See also *Fuller Brush Co.* v. *Town of Green River,* 65 Fed. (2d) 112, noted 88 A. L. R. 183. Over 400 cities in the last four years have adopted measures of this type. *Cf. Commonwealth* v. *Gardner,* 133 Pa. 284, 19 Atl. 550 (1890) App. Dismissed 149 U. S. 774.

The jurisdictions which reach the opposite result on the flat proposition that house-to-house canvassing is not a nuisance of public character and therefore not an appropriate subject for public regulation are South Carolina, Florida, Virginia, and Maryland. *Prior* v. *White,* 180 So. 347 (1938) (*City of New Smyrna, Fla.*); *City of Orangeburg* v. *Farmer,* 781 S. C. 143, 186 S. E. 783; *White* v. *Town of Culpeper,* 1 S. E. (2d) 269 Va. 1939); *Jewel Tea Co.* v. *Town of Bel Air,* 172 Md. 536, 193 Atl. 417.

The Maryland case raises in addition a proposition which in any case must be recognized as a limitation upon the regulatory power even if the public nuisance factor is admitted. In that case the ordinance exempted from the operation of the law residents of the county engaged in farming and persons representing merchants established in the town. In any case the regulation must not be so framed as to discriminate in its operation between persons within the town not in different classes, according to a reasonable application of the ordinance. In addition, the ordinances must not be drawn so as to discriminate against non-residents in favor of residents as an end in itself. See notes 61 A. L. R. 337 and 112 A. L. R. 63. As to examples of such discrimination in other types of ordinances see *Nafzinger Baking Co.* v. *Salisbury,* 329 Mo. 1014, 48 S. W. (2d) 563 (1932).

Similar in effect but distinguishable in legal analysis is the problem of regulation of solicitors by the exaction of regulatory license fees. One case holds that the exaction of a higher license fee from non-residents than from resident solicitors is on its face void as discriminatory. *Edgerton* v. *Slatter,* 219 Wis. 381, 263 N. W. 83.

There is real justification, however, for application of a different fee to non-residents if the higher fee charged him represents the higher cost of investigating his reputation, his wares, or some other service performed in regulating his business in the protection of the public not performed or not so burdensome in the case of a resident. See *American Bakeries* v. *Huntsville,* 232 Ala. 612, 168 So. 880 (1936) app. dis'd 299 U. S. 514; and *American Bakeries Co.* v. *Sumter,* 173 S. C. 94, 174 S. E. 919, app. dis'd, 293 U. S. 523 (1934). In accord with the *Edgerton* case, however, see *Sayre* v. *Phillips,* 148 Pa. 482, 24 Atl. 76 (1892).

A related problem is that of permissible regulations of dealers who, located out of the state, send representatives to take orders and then deliver their merchandise direct to the consumer through channels of interstate commerce. It is in this field of regulation particularly that the *McGoldrick case supra* should give some added weight to the view that non-discriminatory license fees on transactions in interstate commerce may be sustained. See *Jello-O Company* v. *Landes,* 20 Fed. (2d) 120; *Browning* v. *Waycross,* 233 U. S. 16; *Chassanoil* v. *Greenwood,* 116 Miss. 848, 148 So. 781; *State ex rel* v. *Knott,* 114 Fla. 120, 154 So. 143; *Montgomery Ward and Company* v. *Fry,* 277 Mich. 260, 269 N. W. 166.

To the contrary see *City of Kansas City* v. *MacDonald,* 175 S. W. 917; *State* v. *Read,* 178 La. 530, 152 So. 74; *Myer* v. *Miami,* 100 Fla. 15, 131 So. 375. It should be noted that Justice Stone in his footnote 11 and the text which it supplements in the *McGoldrick case* seems to consider these solicitor cases and distinguish the cases holding such regulatory fees on interstate transactions invalid only when their purpose or effect is to suppress the interstate business or place it at a disadvantage in competition with local business.

City Sales Tax

The New York City sales tax on goods delivered in New York pursuant to contracts made in the city contemplating delivery after shipment in interstate commerce, has been held valid by the Supreme Court of the United States. The Court held that so long as the tax does not discriminate against interstate commerce or attempt to "regulate" interstate commerce, it is valid, although it admittedly burdens interstate commerce. The Court divided five to three with the majority and dissenting opinions presenting sharply worded and conflicting theories of constitutional law. The decision opens the way for cities to reach sources of income which have for years escaped municipal taxation on the claim of burden on interstate commerce. *McGoldrick* v. *Berwind Coal Mining Company, McGoldrick* v. *Felt and Tarrant Mfg. Co.,* and *McGoldrick* v. *A. H. DuGrenier, Inc., et al.,* 8 U. S. Law Week 206. (U. S. Sup. Ct., Jan. 30, 1940.)

Debt Limit—Revenue Bonds—Injunction Refused

Sewer revenue bonds of the city of Plattsburg, N. Y., payable only from revenues obtained from operation of the sewers, did not constitute indebtedness of the city within the constitutional limitation meaning. Therefore, a general bond issue for constructing an electric power plant with PWA funds was only $17,000 in excess of the limit, and the Court held an application for an injunction premature, since it did not appear that the $17,000 excess would be surely needed or that the debts would not be reduced by that much before they were issued. *New York State Electric* v. *City of Plattsburg,* 24 N. E. (2d) 122 (N. Y., Nov. 21, 1939).

Franchise—Tax—Impairment of Contract

A franchise to erect telephone poles in the streets by the village of West City granted for a consideration was a binding contract. Where no time was mentioned as to duration, the franchise would be construed as lasting for the life of the grantor even though the latter had assigned it to another company. Since it was not a revocable privilege, a subsequent tax on "all poles over 8 feet high" was void as an impairment of the obligation of contract. *Village of West City* v. *Illinois Commercial Telephone Co.,* 24 N. E. (2d) 352 (Ill., Dec. 15, 1939).

Licenses—Theaters

The Rhode Island law delegating to cities and towns the power to regulate and charge a license fee for theater performances, empowered licensing for revenue as well as regulation. The action of the Board of Police Commissioners of Woonsocket in raising the license fees for movies is sustained, as the shows are subject to regulation or even prohibition and the license grants a mere privilege and not a property right. *Bijou Amusement Co.* v. *Toupin,* 9 A (2d) 852 (R. I., Dec. 19, 1939).

Nuisances—Liability of City

Plaintiff sought damages against the city of Eastland, Texas, for alleged diminution in value of property caused by the city's negligent maintenance of a dump next to it. She valued her property at $2,500 for sale and $300 rental. Evidence was held properly admitted in opposition that she had rendered the property for taxes at a $150 valuation. The jury found no injury to the property. *Clark* v. *City of Eastland,* 134 S. W. (2d) 509 (Texas, Nov. 18, 1939).

Pensions—Police—Resignation Coerced

A patrolman in the Police Department of Cleveland has ceased to be a member of the Division of Police within the meaning of the requirement for a pension for his widow, even though he was induced to resign by coercion and duress. *State ex rel. Abrens* v. *Zupnik,* 24 N. E. (2d) 467 (Ohio, Dec. 13, 1939).

Regulation of Combustibles

The word "storage" in a legislative affirmation of power of cities to "regulate or prevent storage" of petroleum and other combustibles, is broad enough to include the power to regulate "keeping, storing, transporting, selling or use of gasoline." *City of Ottawa* v. *Brown,* 24 N. E. (2d) 363 (Illinois, Dec. 15, 1939).

Revenue Financing—Repair of Incinerator

The operation of an incinerator by the city of Jacksonville is a proprietary function so that the city may validly issue certificates of indebtedness in order to secure funds for the repair of the incinerator where the certificates are payable only out of the revenues of the Salvage Department. *City of Jacksonville* v. *May,* 192 So. 614 (Fla., Dec. 5, 1939).

Taxation—Inclusion in City of Rural Lands—Estoppel

Where the location of land within a city is such that it will in no probability receive any municipal benefits, the power of the city to tax the lands may be enjoined or ousted by quo warranto. Where residents of rural land in South Miami, Fla., had acquiesced in taxation of their land as city property for ten years, the Court held the facts did not show an estoppel against the taxpayers to maintain an action in quo warranto and ousted the city taxing power. *City of South Miami* v. *State,* 192 So. 624 (Fla., Nov. 24, 1939).

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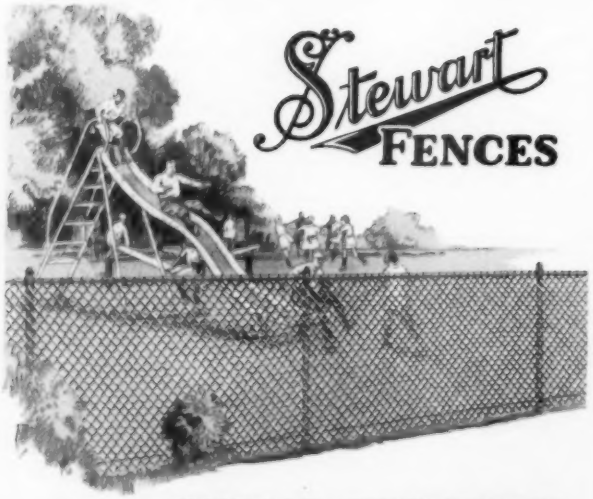

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Zoning

Zoning—The Laws, Administration, and Court Decisions during the First Twenty Years.—By Edward M. Bassett, Member of the New York Bar. Russell Sage Foundation, 130 E. 22d St., New York. Second printing, with additions, 1940. 275 *pp.* $3.00.

The second edition of this book, which continues to be the authority on zoning in this country, contains, besides more complete citations than the first edition, an introductory chapter reviewing the progress and extensions of zoning made in the last ten years, and redefining the principles of zoning for height, area, and use—pointing out misunderstandings that have developed in the use of the term "zoning," what kind of zoning is lawful and what is not. Discussed in this chapter are so-called county and recreational zoning, submarginal farm zoning, and the control of billboards.

As in the first edition, chapter headings are: Relation of Zoning to State Constitutions, State Enabling Acts for Zoning, the Adoption and Amendment of Zoning Ordinances, Zoning Districts, Non-conforming Buildings and Uses, Board of Appeals, Court Procedure, Criminal Proceedings, Contractual Relations, Definitions in the Ordinance, Particular Buildings and Uses, Bibliography.

Waste Collection

Refuse Materials.—American Public Works Association, 1313 *E. 60th St., Chicago, Ill.* 1940. 44 *pp.* 50c.

The second chapter of the 15 proposed chapters of "Refuse Collection Practice," this preliminary bulletin on refuse material defines refuse collection terms, classifies refuse materials, and describes the characteristics of each type. The larger part of the publication is devoted to the quantity of the different types of refuse collected in the 200 cities studied.

Industrial Promotion

Industrial Incubator Buildings.—Department of Manufacture, Chamber of Commerce of the United States, Washington, D. C. 1939. 17 *pp.*

This pamphlet presents results of a survey made in about 100 communities, of incubator buildings, which provide for the new small manufacturer temporary space with provision for expansion, in the hope that he will permanently settle in the community. The location of these structures is discussed, and the types of building which are used in various communities. Cases in which local business corporations have helped in the development of these projects are described, as are the special industrial districts which have been established in some cities.

Housing

New Homes for Old—Public Housing in Europe and America.—By William V. Reed and Elizabeth Ogg. The Foreign Policy Association, 8 *W. 40th St., New York.* 1940. 112 *pp.* 25c.

A popular, lively analysis of the housing problem—its roots, causes and possible cures; what six representative European countries did about it in the interim between the two world wars; what America can learn from these countries, and what this country—at peace and free to build—is doing and should do in future, about this major national ill. Profusely illustrated.

Better Housing—A Discussion Program. The Foreign Policy Association. 1940. 25c.

A study packet based on "New Homes for Old," and containing outlines for four or five discussion meetings, several supplementary pamphlets and clippings, and bibliography.

Road Builders' Convention

Convention Proceedings 1939. *American Road Builders' Association.—Charles M. Upham, Editor-in-Chief, American Road Builders' Association, National Press Bldg., Washington, D. C.* 1940. xi + 624 *pp.* $10.00.

New methods and developments in highway design, construction, finance and legislation are discussed in this extensive illustrated collection of papers given at sessions on general highway subjects, stabilization and safe highways, and sessions of the municipal, county, contractors', educational and planning divisions of the Association. The municipal section includes talks on such current city street problems as Federal and state road aid to municipalities, lighting, elevated highways, street-railway track and pavement construction, and traffic as it relates to street design and construction.

Water

Contributions from the College of Engineering, 1939-40. *— College of Engineering, New York University, University Heights, New York.* 1940. 30 *pp.*

Contained in this publication are the four articles: Use of Sulfur Compounds for Treatment of Water and Industrial Wastes, by Lewis V. Carpenter, Lloyd R. Setter and John J. Coates, which considers the processes of disinfection, sand cleaning, color removal, coagulation, oxidation; Cleaning Filter Beds with Sulphur Dioxide, by Lewis V. Carpenter and Lloyd R. Setter; Complex Silicate Scales in High-Pressure Boilers—Their Occurrence and Correction, by Sheppard T. Powell, Lewis V. Carpenter and John J. Coates; and Recent Trends in Water Treatment, which covers the following processes involving sulphur compounds—preparation of coagulants, removal of color and turbidity, removal of silica, sand cleaning, taste and odor control, and deoxygenation.

Methods of Assessment

Urban Land Appraisal—Assessment Practice Series: No. 2.—National Association of Assessing Officers, 1313 *E. 60th St., Chicago, Ill.* 1940. 170 *pp.* $3.00.

This publication makes no attempt to develop new rules and procedures to be used in assessing property taxes, but contains a critical description of those rules that have been advocated by authorities in the field, which are now in use. It is intended as a practical guide for the assessor in working out that system which best fits the circumstances peculiar to his assessment district. Chapters are devoted to: Value; Land Appraisal Methods; Establishing Unit Land Values; Depth Influence; Irregular Lots; Lines of Coincidence; Corner Influence—Regular Corners; Corner Influence — Special Problems; Alley Influence. Useful formulae and tables are included.

Planning Education

A Question Guide for the Study of Regional Planning.—By Karl B. Lohmann, Professor of Landscape Architecture, University of Illinois. Daniels Press, Champaign, Ill. 1940. 54 *pp.* $1.35.

Five hundred searching questions on 35 general topics in the regional planning field are presented in this pamphlet, which is intended as a guide for the study or teaching of the subject of regional planning. A brief introduction defines generally each topic, and gives its relation to the subject as a whole. Topics include such subjects as: metropolitan regional planning; county planning; river basin planning; climate; population; land-use planning; forests; water; sewage disposal; power and communication networks; marketing; airports; roads; parks and recreation; health; etc. A brief bibliography is listed.

Public Utilities

The Economics of Public Utilities.—By Emerson P. Schmidt, University of Minnesota, Minneapolis, Minn. Edwards Brothers, Inc., Ann Arbor, Mich. 1939. 201 *pp.* $3.00 *from* THE AMERICAN CITY.

Public utility economics is a broad field, and this volume does not attempt to cover it completely; but it deals with a large and highly significant portion — especially important to public officials — and treats it in a searching, untrammeled manner, with recognition of old and new points of view. Rate regulation is the chief subject handled, with more brief discussion of public utility status, service standards, integration of utility companies, and public ownership. As a study in public regulation it has broader implications than as to the orthodox utilities alone. The handling of certain controversial questions, such as rate-base determination, will invite considerable dissent, but the author, who is a professor of public utilities at the University of Minnesota, is not dogmatic; he presents opposing points of view without strong bias, although with occasional pungent comment. The volume is designated a "preliminary edition."

HAROLD M. OLMSTED.

Waste and Sewage Disposal

Annotated Bibliography on Incineration, Carbonization and Reduction of Garbage, Rubbish and Sewage Sludge.—WPA for the City of New York. Department of Sanitation, 125 *Worth St., New York.* 1940. 146 *pp.*

Not intended to cover to any extent material on domestic and industrial incineration, this practical bibliography, devoted largely to municipal disposal, contains references to 504 publications on incineration, carbonization and reduction of garbage, rubbish and sewage sludge. Items are arranged chronologically—each reference being briefly described—and are indexed by author and subject.

Traffic Departments

City Traffic Engineering Departments.—Edited by Bruce D. Greenshields, Associate Professor, College of the City of New York. Institute of Traffic Engineers, 60 *John St., New York.* 1940. 63 *pp.* 50c.

Intended as a guide to communities contemplating the formation of traffic departments, this pamphlet contains data, arranged in condensed form, on all city traffic departments now employing full-time traffic engineers—about 30 in number. Data include, for each city, an organization chart; the name of the chief engineer, duties and responsibilities of the department; number of employees on the staff; relation to other city departments. A plan is recommended for smaller cities that cannot afford to have a full-time traffic engineer.

Contracts and Officials

Restrictions Upon the Interest of Municipal and Other Public Officials in Governmental Contracts.—The American Municipal Association, 1313 *E. 60th St., Chicago, Ill.* 1940. 46 *pp.* $1.00.

Laws which prohibit municipal officers and employees from being personally or pecuniarily interested—either directly or indirectly—in the contracts of the public unit or agency which they represent as officers or employees, often work hardship, to the city government in keeping some qualified man from taking office, or to an official who must sacrifice some business because of this restriction. Because of this, several states have considered modification of these laws. This publication reviews statutes, city charters, court decisions and common law rules relating to this question, and tabulates the results. (See February issue of THE AMERICAN CITY, p. 107.)

PROTECTION and prevention are the watchwords of the motorcycle officer. His very presence makes motorists and pedestrians more careful — whether out on the open highway or in congested city traffic. He and his fellow officers, mounted on dependable Harley-Davidsons, cover more territory — make selective enforcement effective — are essential to efficient traffic control. For all-around service — for smoothing out traffic control problems — for building prestige for your department — for setting new records in accident prevention — equip your officers with Harley-Davidson Police Motorcycles. Ask your dealer to bring over a 1940 model for your inspection.

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Finance

Report of the 24th Annual Convention of the National Association of State Auditors, Comptrollers and Treasurers, held in Seattle, Wash., August, 1939. Apply to the Sec., R. W. Winn, State Treas., Jefferson City, Mo. vi+ 69 pp.

Several papers printed in these proceedings will be of interest to municipal officials: Uniform Accounting and Reporting for Counties and Cities, by A. C. Wagner; Changes in State-Local Relations, by Vernon J. Brown; Changes in Federal-Local Government Relations, by R. E. Riley; and State Control over Local Debts, by Richard E. Talbott.

Construction Standards

Recommended Fundamental Principles, Tentative Minimum Requirements and Tentative Standard Welded Connections for Tier Buildings.—American Institute of Steel Construction, 101 Park Ave., New York. 1940. 11 *pp.*

A tentative report, to be followed by more complete information in future.

Local Government Studies

Municipal Government in Florida.—Work Projects Administration. Sponsored and published by Florida State Planning Board, Jacksonville, Fla. 1939. *xviii+213 pp.*

A comprehensive and thorough study, this volume presents, in an objective manner, the composite municipal problem of Florida. Taxation and finance are the main problems of the municipalities in the state, and these are here given most consideration. The main parts of the report are devoted to: internal organization; management and operation; revenues; expenditures; debt; conclusions; organizations and officials. As a whole, the publication presents a historical record of the activities and problems of municipal government in Florida from 1914 to 1926.

Local Government in Nebraska.—By Roger V. Shamate, Director of Research, Nebraska Legislative Council, Lincoln, Nebr. 1939. 81 *pp.*

The powers, functions, forms, personnel, finance, law enforcement, and interrelations of the different units of local government in Nebraska—county and township, city and village, school and special districts—are described in this report. Although largely uncritical, the report does suggest consideration of some improvements, in connection with multiplicity of governmental units; relationships between the state and its subdivisions; forms of government; employees.

Children in the City

Children in a Democracy—February, 1940, *issue of Survey Midmonthly.—Survey Associates Inc., 112 E. 19 St., New York.* 1940. 55 *pp.* 30c.

This issue of the *Survey Midmonthly* reports the recent 1940 White House Conference on Children in a Democracy, and evaluates its significance. Findings and conclusions are summarized, and suggestions are made for what can be done to follow up the recommendations of the Conference in individual localities.

Community Social Services for Children.—Children's Bureau, U. S. Department of Labor, Washington, D. C. Apply to Supt. of Documents, Washington, D. C. 1939. 11 *pp.*

A brief, to-the-point summary of the social services that every community should have for its children.

Kentucky Counties

County Consolidation. — Research Division, Kentucky Legislative Council in Cooperation with the WPA Staff of the State Planning Board, Frankfort, Ky. 1940. 102 *pp.*

Clearly outlined text, maps and tables analyze, in this monograph, the need for county consolidation in Kentucky. The ability of present counties to maintain an independent, self-sustaining and effective government organization is investigated. As a model, a study is made of the consolidation of one specific area, containing several counties, according to natural economic and social groupings. One part of the report considers the constitutional and legal problems involved in the abolition of counties through consolidation, and another reviews briefly the literature, and lists bibliography, on the general subject of county consolidation in this country.

Land Problems

A History of the Public Land Policies.—By Benjamin Horace Hibbard, Ph.D., Professor of Agricultural Economics in the University of Wisconsin. Peter Smith, New York. 1939. *xix+591 pp.* $5.00 *from* THE AMERICAN CITY.

This book was originally published in 1924. Since then tables and statistics have been brought up to date and corrected, and the volume is now republished at a time when interest in land problems and in a planned public land policy for this country is growing. It analyzes the actions and attitudes of the government with respect to public land from the beginnings of this country down to the present time. Reasons for the policies and their results, and the distribution of public land today, are studied. The final chapter is a critical examination of government land policies in this country, and recommendations for the future.

Traffic Facilitation

Channelization of Motor Traffic.—By Guy Kelcey. American Society of Civil Engineers, 33 W. 39th St., New York. 1940. 26 *pp.*

This is a compact presentation of the principles of channelization, by which the movements of vehicles are confined to definite lanes. It considers the human factors and the mechanical factors involved in continuous traffic flow, and the application of the principles involved to street design and traffic direction.

Financing Education

The Problem of School Costs as Viewed by Educational Research. — The Committee on School Costs, Educational Research Association of New York State, Albany, N. Y. 1940. 16 *pp.*

School Cost Nonsense.—Public Information Service, New York State Teachers Association, Albany, N. Y. 1940. 6 *pp.*

School costs in New York State have been under fire since 1930. These two publications point out, however, that although the total expenditure for education is higher in New York than in most states, this does not necessarily imply that education costs in this state are extravagant, or any higher than they should be to maintain required standards, or, indeed, any higher than in other states when all factors, such as cost of living, are considered. They suggest what factors should be considered when comparing educational costs.

Public Libraries

A Metropolitan Library in Action—A Survey of the Chicago Public Library.—By Carleton Bruns Joeckel and Leon Carnovsky, Graduate Library School, The University of Chicago. The University of Chicago Press, Chicago, Ill. 1940. *xvii + 466 pp.* $3.00 *from* THE AMERICAN CITY.

The first part of this book deals with the organization and administration of the Chicago public library—its history and government, board, finance, personnel; the second part is concerned with library services, which includes a general analysis of the relation of the library to the community. The findings and recommendations are applicable to any metropolitan system.

Illinois Taxation

Property Taxation: Assessed Valuations, Tax Rates, and Tax Extensions, 1927-1936, *and* 1937-1938, *Volume II. vii + 654 pp., and viii + 249 pp., respectively. Receipts and Disbursements of Townships and Road Districts,* 1925-1936; *Volume III. viii + 637 pp. Survey of Local Finance in Illinois by the Illinois Tax Commission, Springfield, Ill., in cooperation with Works Projects Administration.* 1939.

The first volume of this survey, reviewed in the January issue of THE AMERICAN CITY, was an Atlas of Taxing Units in Illinois. The second volume contains, in table form, assessments, tax rates and tax extensions, and constitutes a "fiscal census and directory" of Illinois taxing units. The third volume, containing receipts and disbursements of townships and road districts for each unit, also consists of tables.

Water Pollution Literature

Summary of Current Literature—Water Pollution Research.—Department of Scientific and Industrial Research, Teddington, Middlesex, England. Apply to His Majesty's Stationery Office, London, England. 1940. 38 *pp.* 2s. *net.*

Contained in this publication are abstracts of original literature recently published, on the subjects of water supplies, analysis and examination of water, sewage, trade waste waters, pollution of natural waters, and other miscellaneous subjects in the field.

Transit Plan

A Transit Program for the Los Angeles Metropolitan Area.—Transportation Engineering Board, Los Angeles, Calif. 1940. 70 *pp.*

The transit problem in Los Angeles is a distinctive one because Los Angeles is spread out more than most cities. This publication presents the condensed findings on the transit needs of the city, and recommendations for development of facilities for private and mass transit, and a plan for coordination of mass transportation operations. Numerous diagrams, maps and charts illustrate the text. Consideration is given to engineering and right-of-way; central business district; and unification of transit operations.

Transients

Migration and Social Welfare.—By Philip E. Ryan. Russell Sage Foundation, 130 E. 22d St., New York. 1940. *viii + 114 pp.* 50c.

The problem of the non-settled person in the community has become particularly acute in the last ten years. A brief history of migratory movements in this country since its beginning is sketched in this publication, and the causes and results of the growth of migration during the depression decade are studied. The chapter, "When Migrant Meets Community," discusses problems of the transient in relation to employment, health, housing, education, recreation, relief, etc. Proposals and experiments which have been made to resolve the conflict between the transient and the community are presented.

Other Reports Received

CHICAGO, ILL.—Annual Report, Chicago Plan Commission, 1939. 6 pp.

CINCINNATI, OHIO.—Annual Report, Department of Purchasing, 1939. 9 pp.

CONCORD, N. H.—"What We Earn, What We Owe," a Report to the Commission for the Promotion of the Wealth and Income of the People of New Hampshire.—By Samuel Crowther. 1940. 64 pp. 10c.

DISTRICT OF COLUMBIA.—Inspection Manual.—Compiled by W. A. Van Duzer, Director, Motor Vehicle Safety Inspection Division, Department of Vehicles and Traffic, Government of the District of Columbia. 1939. 55 pp.

EASTON, PA.—Annual Reports, 1937 and 1938. 42 pp.

GARY, IND.—Financial Report, 1939. 28 pp.

HARTFORD, CONN.—Annual Report, Board of Park Commissioners and Division of Public Cemeteries, year ended March 31, 1939. 67 pp.

LOS ANGELES, CALIF.—Annual Report, Social Service Commission. 1939.

NEW YORK, N. Y.—"Merit System Advancing," Annual Report, Civil Service Commission, 1938 and early 1939. 108 pp.

PHILADELPHIA, PA.—Annual Report, Pennsylvania Economy League, Inc., 1939. 8 pp.

PLYMOUTH, MICH.—Annual Report, 1938-39. 39 pp.

SPRINGFIELD, ILL.—Annual Report, City Water, Light and Power Department, year ended Feb. 28, 1939. 31 pp.

WASHINGTON, D. C.—Parking and Terminal Facilities.—Safety & Traffic Engineering Department, American Automobile Association. 1940. 23 pp.

WINSTON-SALEM, N. C.—Statement of Financial Information, 1940. 14 pp.

YOUNGSTOWN, OHIO.—Annual Report, Sinking Fund, 1939. 27 pp.

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Conventions - - When and Where

Meeting is annual convention unless otherwise designated

MARCH 18-20.—BIRMINGHAM, ALA.
American Water Works Association—Southeastern Section. (Thomas Jefferson Hotel.) Sec., B. P. Rice, Room 425, State Office Bldg., Columbia, S. C.

MARCH 20-22.—TRENTON, N. J.
New Jersey Sewage Works Association. (Stacy-Trent Hotel.) Sec., John R. Downes, Bound Brook, N. J.

MARCH 27-29.—LONDON, ONT.
American Water Works Association—Canadian Section. (Hotel London.) Sec.-Treas., Dr. A. E. Berry, Dept. of Health, Toronto, Ont.

APRIL 4-5.—LAFAYETTE, IND.
American Water Works Association—Indiana Section. (Purdue Univ.) Sec., H. G. Horstman, 603 Traction Terminal Bldg., Indianapolis, Ind.

APRIL 5-6.—MILES CITY, MONT.
American Water Works Association—Montana Section. (New Milligan Hotel.) Sec., Herbert B. Foote, State Board of Health, Helena, Mont.

APRIL 10-13.—HOUSTON, TEXAS.
National Association of County Officials. (Rice Hotel.) Sec.-Treas., George F. Breitbach, Court-House, Milwaukee, Wis.

APRIL 15-17.—FAYETTEVILLE, ARK.
Arkansas Water and Sewage Works Conference. (Univ. of Arkansas.) Sec., Harrison Hale, Univ. of Arkansas, Fayetteville, Ark.

APRIL 16.—MIDDLETOWN, CONN.
New England Sewage Works Association. Spring meeting. (Higgins' Inn.) Sec.-Treas., L. W. Van Kleeck, State Dept. of Health, Hartford, Conn.

APRIL 17-19.—EXCELSIOR SPRINGS, MO.
Missouri Association of Public Utilities. (Elms Hotel.) Asst. Sec., Jesse Blythe, 101 W. High St., Jefferson City, Mo.

APRIL 21-25.—KANSAS CITY, MO.
American Water Works Association. (Hotels Phillips, President and Muehlebach.) Sec., Harry E. Jordan, 22 E. 40th St., New York.

APRIL 30-MAY 2.—WASHINGTON, D. C.
Chamber of Commerce of the United States. Sec., Ralph Bradford, 1615 H St., N. W., Washington, D. C.

MAY 8-11.—ATLANTIC CITY, N. J.
National Fire Protection Association. (Haddon Hall.) M'ng Dir., Percy Bugbee, 60 Batterymarch St., Boston, Mass.

MAY 9-10.—AKRON, OHIO.
American Water Works Association—Ohio Section. (Mayflower Hotel.) Sec., T. R. Lathrop, State Dept. of Health, Columbus, Ohio.

MAY 9-11.—PORTLAND, ORE.
American Water Works Association—Pacific Northwest Section. (Portland Hotel.) Sec., Fred Merryfield, Oregon State College, Corvallis, Ore.

MAY 13-17.—PITTSBURGH, PA.
National Association of Housing Officials. (William Penn Hotel.) Annual meeting, 15-17, preceded by Managers' Div., 13-14. Sec., Coleman Woodbury, 1313 E. 60th St., Chicago, Ill.

MAY 16-18.—JACKSONVILLE, FLA.
American Water Works Association—Florida Section. Sec., A. P. Black, Univ. of Florida, Gainesville, Fla.

MAY 16-17.—SALISBURY, MD.
Maryland-Delaware Water and Sewerage Association. (Wicomico Hotel.) Sec., A. W. Blohm, 2411 N. Charles St., Baltimore, Md.

MAY 21-24.—ST. LOUIS, MO.
Smoke Prevention Association. Sec., Frank A. Chambers, City Hall Square Bldg., Chicago, Ill.

MAY 22-24.—CHICAGO, ILL.
American Water Works Association—Illinois Section. (Congress Hotel.) Sec., H. E. Hudson, Jr., 6843 Oglesby Ave., Chicago, Ill.

MAY 23-24.—EVERETT, WASH.
Association of Washington Cities. (Monte Cristo Hotel.) Exec. Sec., Chester Biesen, Univ. of Washington, Seattle, Wash.

MAY 23-24.—SEASIDE, ORE.
League of Oregon Cities. (Hotel Seaside.) Sec., Herman Kehrli, Univ. of Oregon, Eugene, Ore.

JUNE 3-6.—ST. LOUIS, MO.
Building Officials' Conference of America. (Hotel Jefferson.) Address: Sec.-Treas., William F. Hurd, Comr. of Bldgs., Indianapolis, Indiana.

JUNE 6-7.—ITHACA, N. Y.
American Water Works Association — New York Section. (Hotel Ithaca.) R. K. Blanchard, 50 W. 50th St., New York.

JUNE 6-8.—WILMINGTON, DEL.
Eastern Association of Fire Chiefs. (Hotel du Pont.) Sec., Charles E. Clark, Box 217, Wayne, Pa.

JUNE 10-12.—ROCHESTER, N. Y.
Conference of Mayors and Other Municipal Officials of the State of New York. Exec. Sec., William P. Capes, City Hall, Albany, N. Y.

JUNE 17-19.—DETROIT, MICH.
Municipal Finance Officers Association of the United States and Canada. (Hotel Statler.) Exec. Dir., Carl H. Chatters, 1313 E. 60th St., Chicago, Ill.

JUNE 20-22.—SYRACUSE, N. Y.
New York State Sewage Works. (Hotel Syracuse.) Sec.-Treas., A. S. Bedell, State Dept. of Health, Albany, N. Y.

JUNE 24-28.—SWAMPSCOTT, MASS.
American Institute of Electrical Engineers. (New Ocean House.) Nat'l Sec., H. H. Henline, 33 W. 39th St., New York.

JUNE 24-26.—STATE COLLEGE, PA.
Pennsylvania State Association of Boroughs. (Nittany Lion Hotel.) Pres., Thomas F. Chrostwaite, Hanover, Pa.

JUNE 24-28.—STATE COLLEGE, PA.
Pennsylvania Water Works Operators' Association. Sec.-Treas., I. M. Glace, 22 S. 22d St., Harrisburg, Pa.

JUNE 26-28.—STATE COLLEGE, PA.
Pennsylvania Sewage Works Association. (State College Campus and Nittany Lion Hotel.) Sec., L. D. Matter, Kirby Health Center, Wilkes-Barre, Pa.

JUNE 30-JULY 4.—MILWAUKEE, WIS.
National Education Association of the United States. Exec. Sec., Willard E. Givens, 1201 16th St., N. W., Washington, D. C.

JULY 8-12.—SAN FRANCISCO, CALIF.
National Conference on Planning. Joint annual conference of American Society of Planning Officials, American Institute of Planners, the American Planning and Civic Association, and the National Economic and Social Planning Association. (Fairmont Hotel.) Conference Dir., Walter H. Blucher, 1313 E. 60th St., Chicago, Ill.

JULY 21-26.—STANFORD UNIVERSITY, CALIF.
Western Conference for Commercial and Trade Executives. (Lagunita Court.) Business Mgr., Leonard E. Read, 1151 S. Broadway, Los Angeles, Calif.

JULY 23-25.—NEW YORK CITY.
New York State Association of Chiefs of Police. (Hotel Astor.) Sec.-Treas., R. W. Morris, P. O. Box 346, Geneva, N. Y.

JULY 23-25.—WILLIAMSPORT, PA.
Pennsylvania Chiefs of Police Association. (Lycoming Hotel.) Sec., F. B. Titus, Lansdowne, Pa.

AUGUST 18-24.—EVANSTON, ILL.
National Institute for Commercial and Trade Organization Executives. (Northwestern Univ.) Sec., C. R. Miles, 832 First Nat'l Bank Bldg., Chicago, Ill.

AUGUST 22-24.—LOGAN CITY, UTAH.
State Municipal League of Utah. (Eccles Hotel.) Sec., Tom McCoy, Public Safety Bldg., Salt Lake City, Utah.

AUGUST 27-30.—DETROIT, MICH.
National Shade Tree Conference. (Book-Cadillac Hotel.) Sec.-Treas., L. C. Chadwick, Ohio State Univ., Columbus, Ohio.

SEPTEMBER 9-12.—SPRING LAKE, N. J.
Illuminating Engineering Society. (Essex and Sussex Hotel.) Gen. Sec., A. D. Cameron, 51 Madison Ave., New York.

SEPTEMBER 9-12.—MILWAUKEE, WIS.
International Association of Chiefs of Police. (Hotel Schroeder.) Exec. Vice-Pres., William P. Rutledge, 1313 E. 60th St., Chicago, Ill.

SEPTEMBER 11-13.—ANN ARBOR, MICH.
American Water Works Association—Michigan Section. (Michigan Union.) Sec., M. N. Gerardy, Water Board Bldg., Detroit, Mich.

SEPTEMBER 16-20.—DUBUQUE, IOWA.
International Association of Fire Fighters. (Julian Hotel.) Sec.-Treas., George J. Richardson, A. F. of L. Bldg., Washington, D. C.

SEPTEMBER 16-19.—SAN DIEGO, CALIF.
League of California Cities. Sec., Richard Graves, 2121 Allston Way, Berkeley, Calif.

SEPTEMBER 18-20.—ROCK ISLAND, ILL.
Illinois Municipal League. (Fort Armstrong Hotel.) Exec. Dir., A. D. McLarty, 500 E. Capitol Ave., Springfield, Ill.

SEPTEMBER 22, WEEK OF.—WHITE SULPHUR SPRINGS, W. VA.
American Transit Association. (The Greenbrier Hotel.) Gen. Sec., Guy C. Hecker, 292 Madison Ave., New York.

SEPTEMBER 22-24.—ROANOKE, VA.
League of Virginia Municipalities. (Hotel Roanoke.) Exec. Sec., Morton L. Wallerstein, 902 Travelers Bldg., Richmond, Va.

SEPTEMBER 24-27.—CLEVELAND, OHIO.
American Institute of Park Executives and the American Park Society. (Hotel Statler.) Exec. Sec., Will O. Doolittle, Box 422, Tulsa, Okla.

SEPTEMBER 24-27.—NEW YORK CITY.
New England Water Works Association. (Hotel Commodore.) Sec., Frank J. Gifford, 615 Statler Bldg., Boston, Mass.

SEPTEMBER 26-27.—WILMINGTON, DEL.
American Water Works Association — Four States Section. Sec.-Treas., Carl A. Hechmer, Washington Suburban Sanitary Dist., Hyattsville, Md.

SEPTEMBER 30-OCTOBER 4.—CLEVELAND, OHIO.
National Recreation Association. (Hotel Statler.) Sec., Howard S. Braucher, 315 Fourth Ave., New York.

OCTOBER 7-11.—CHICAGO, ILL.
National Safety Council. (Stevens Hotel.) M'ng Dir., W. H. Cameron, 20 N. Wacker Drive, Chicago, Ill.

OCTOBER 8-11.—DETROIT, MICH.
American Public Works Association. Exec. Dir., Frank W. Herring, 1313 E. 60th St., Chicago, Ill.

OCTOBER 14-17.—TULSA, OKLA.
American Water Works Association—Southwest Section. Sec., Lewis A. Quigley, 3320 W. Berry St., Fort Worth, Texas.

OCTOBER 14-17.—JACKSONVILLE, FLA.
International Municipal Signal Association, Inc. (George Washington Hotel.) Sec., Irvin Shulsinger, 8 E. 41st St., New York.

OCTOBER 14-18.—DETROIT, MICH.
National Association of Public School Business Officials. (Book-Cadillac Hotel.) Sec., H. W. Cramblet, Board of Education, Pittsburgh, Pa.

OCTOBER 18-19.—ATLANTIC CITY, N. J.
American Water Works Association — New Jersey Section. Fall meeting. Sec.-Treas., C. B. Tygert, Box 178, Newark, N. J.

OCTOBER 23-25.—LEXINGTON, KY.
American Water Works Association — Kentucky-Tennessee Section. Sec.-Treas., Howard D. Schmidt, 420 6th Ave., N., Nashville, Tenn.

NOVEMBER 7-8.—ST. PAUL, MINN.
American Water Works Association—Minnesota Section. (St. Paul Hotel.) Sec.-Treas., Ronald M. Finch, Wallace & Tiernan Co., Inc., 414 Flour Exchange, Minneapolis, Minn.

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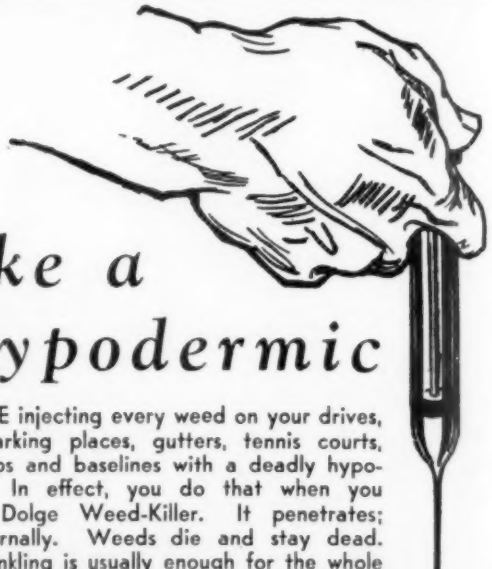

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News and Illustrations

Items of Interest to City, Town and County Officials, and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings

The South Bend Gutter-Snipe

Clean City Gutters Mean Clean Streets

Since modern motor traffic automatically sweeps practically all the refuse from the heavily traveled lanes on city streets and pushes it over into the gutters, it is most important that gutters be kept free of dirt and refuse. The Gutter-Snipe, developed particularly for this service by the Municipal Supply Co., South Bend, Ind., sweeps 5 feet 6 inches wide and picks up all the dirt and refuse. It has an unusually large hopper for a machine of its size, the rust-resisting steel hopper measuring 1½ cubic yards, and will carry at least ¾-yard of refuse when sweeping. It has a sprinkling attachment which applies a fine spray to lay the dust on the pavement ahead without creating mud.

The over-all dimensions of the Gutter-Snipe are 12 feet 3 inches long, 80 inches wide, 67 inches high, and it will turn within a 19-foot circle. It operates at 3.5 mph for heavy sweeping in first gear, at 6 mph for normal sweeping in second gear, and at 17 mph for cruising in high gear. The gutter broom has a diameter of 28 inches, and the pick-up broom is 32 inches in diameter and 42 inches long, filled with any obtainable fiber selected by the purchaser.

Hydraulic power controls are installed conveniently at the driver's seat with individual controls for the gutter broom, the pick-up broom and the hopper. The water tank has a capacity of 150 gallons, and the fuel tank a capacity of 15 gallons. The Continental Model Y-112 23-hp engine operates to give an average of 3½ miles per gallon sweeping in second gear.

The machine is equipped with two headlights for night work, as well as a floodlight on the curb side, one tail-light, two clearance lights, one instrument panel light, and two rear reflectors to comply with safe regulations. Extra equipment available includes a leaf rake attachment and full vision cab.

New Motor Graders Announced by Adams

Two new motor graders of the "engine-over-drive" type have been announced by the J. D. Adams Co., Indianapolis, Ind.

The New Adams 411 at Work

The machines are identical in design, the difference being in the power. The 411 is powered with a 62½-hp diesel, while the smaller 303 is powered by a 45-hp gasoline engine. These new graders are built around the all-welded, box-type main frame now used on all Adams motor and leaning-wheel graders.

The operating advantages of the new graders claimed by the manufacturer are that with the same setting of the lift linkage and with the blade in the center position, the blade can be adjusted from deep ditching position to a high bank cutting position in about 40 seconds, permitting 90 per cent of the work to be made without the operator's leaving his cab. The blade can be set vertically if desired and very wide shoulder reach or flat bottom ditching positions can be obtained.

The circle is full revolving, and the blade can be set to ditch or move dirt with the machine operating in reverse gear. The blade can be reversed with the scarifier on the machine by simply lifting the scarifier teeth out.

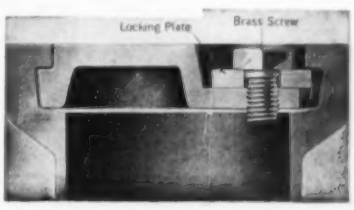
Both machines have eight forward speeds and two reverse speeds. Balanced weight distribution permits surface maintenance at 6 to 7 mph without objectionable bouncing or vibration. The wide range of blade adjustments in all directions, tandem drive with low-pressure tires, and leaning front wheels, permit these graders to be utilized on all types of surface, ditch and bank work.

Service Box Covers That Do Not Work Loose

The covers on Monitor service boxes, made by the Central Foundry Co., 386 Fourth Avenue, New York, do not get away from the service box, because this is prevented by their special construction.

Older service boxes depend on a screw passing down through the cover and through a lug in the top section to hold the cover in place. The Stay-On cover of the Monitor service box has no lug in the shaft. The cover, which is self-contained, is fitted into the top section flush with the top of the frame. A small, round, suitable locking plate is then placed upon the cover and both are fastened together with a short pentagon-head brass screw. An ordinary cast iron pentagon key tightens the screw. The locking plate sits securely between the screw head and the lip cast on the cover frame, thus actually locking the cover in place. The screw in this cover will not bend or break, because it is not subject to strain. Because it fits down into the shaft instead of across the top of the shaft, the Stay-On cover does not cock or tip on edge, thus assuring safety under foot for the pedestrian as well as positive protection for the box.

Monitor service boxes with Stay-On covers, roadway boxes, valve boxes and gas drip boxes are described and illustrated completely in Catalog B-40 which may be secured direct from Central Foundry Co.



The Monitor Service Box Cover

ANOTHER REASON WHY BRICK COSTS LESS PER YEAR OF SERVICE

● Another winter—a hard one in most localities.

Look at your roads and streets—compare the way brick has come through with other types, no scaling from ice-melting salts, alkalies or chemicals. One more important reason why brick costs less per year of service. You can use any of these ice-removal materials without damage to brick.

Nor is there damage to brick where these melting materials have been used as an admixture with sand or cinder stock piles.

And, of course, brick best withstands the concentrated chain-shod traffic in snow-rutted roads or streets. The experience records of hundreds of cities and other road building units and many accelerated tests have definitely established that point.

The cost of upkeep on brick pavements is always low, ranging from negligible to nil.

Brick resists damage from weather, traffic and ice-removal material, and thereby gives smooth, safe passage to any type of traffic at the lowest cost per year of service. National Paving Brick Association, National Press Building, Washington, D. C.

BRICK

FOR NEW CONSTRUCTION AND RESURFACE WORK

Do you mention THE AMERICAN CITY? Please do.

The Schramm Engine-Compressor Unit for Replacing V-8 Engines So As to Furnish Air and Power from the Same Unit

Engine-Compressor Made from Ford V-8

By a patented construction, Schramm, Inc., West Chester, Pa., has developed the new Model 55 Schramm Fordair compressor, consisting of a standard 8-cylinder Ford V-8 block with four cylinders converted to air compression and the other four cylinders still used as power cylinders. In each bank of cylinders there are two compression and two power cylinders. Each compressor cylinder has a poppet type valve, mechanically operated from the cam shaft. Unloading is accomplished by holding the intake valve open by air pressure while each intake is protected by an oil-bath-type air cleaner. Double-size, long-life discharge valves are located in the head directly over the cylinders. All models are equipped with an automatic engine slow-down reducing the speed during the unloading period, and increasing the speed before loading starts, thus conserving fuel and reducing engine wear. There are two models, the 55 and 105 Fordair, the compressor parts of which, including valves, are interchangeable.

By placing the Model 55 under the hood of a Ford V-8, the truck becomes an air compressor as well as a truck. This same idea has been applied to several other self-propelled outfits utilizing the Ford V-8 engine, such as railroad motor cars and small crawler compressor units. The use of the combined truck and compressor will allow many cities to buy compressors that ordinarily would not feel able to do so, and they make excellent extra service units for highway maintenance departments. Complete information on these compressors will be found in Bulletin 3915 which Schramm, Inc., will be glad to send to readers of this magazine.

William Penn Hotel Now Statler-Operated

Hotels Statler Co., Inc., in the Cleveland house of which the American Institute of Park Executives will hold its annual convention September 24-27, recently became the greatest hotel group in the world when it took over operation of the Hotel William Penn in Pittsburgh, Pa.

In addition to the Cleveland Statler, the organization has hotels bearing its name in Detroit, St. Louis, Boston and Buffalo and operates the Hotel Pennsylvania in New York City.

Activated Alum Corp. Extends Its Services

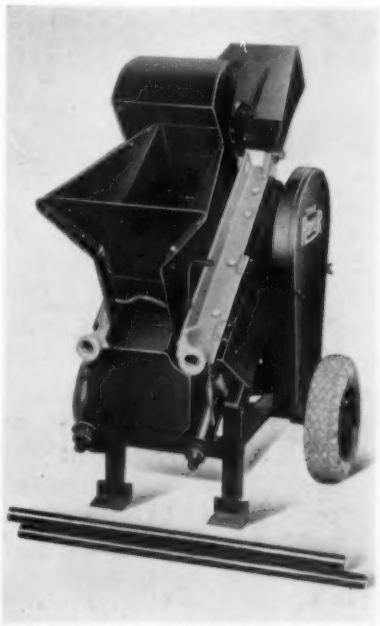
The well-known traveling laboratory of the Activated Alum Corporation, Curtis Bay, Baltimore, Md., is on the road all the time and visits many of the small water-works plants throughout the country as well as some of the larger ones. Fred E. Stuart, President, reports that the studies made as a result of these visits show that the general trend in coagulation leading toward better conditioning of the water is creating more serious thought about filter sand which most present plants have had in service a number of years. Many of the plants are needing new sand of different effective size owing to improvements in coagulation. For this reason Activated Alum Corporation is increasing its service to the water-works field by accepting the Cape May filter sand account for water-works distribution.

Allied with coagulation and filtration is the recent interest shown in the Palmer Filtersweep, a filter bed agitator which offers water-works operators a new type of surface wash equipment. Activated Alum Corporation has added this account to its services.

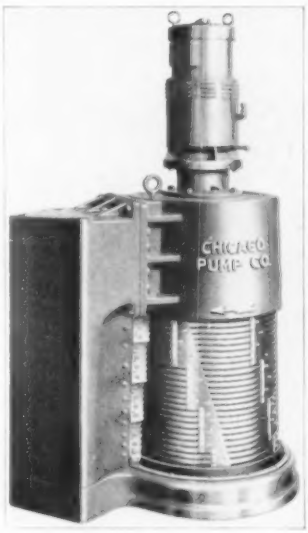
New Lighter Weight Sludge Disintegrator

The Royer line of sewage-sludge disintegrators for shredding, mixing, aerating and further reducing the moisture content of sewage-sludge cake as it comes from the drying bed to prepare it for fertilizer, has been completely redesigned by the Royer Foundry & Machine Co., Kingston, Pa. This has resulted in reductions in weights up to 20 per cent and a lowered shoveling height of about 7 inches. These changes effect electric-powered models only as the gasoline-engine-driven and belt-to-tractor-driven models remain unchanged.

Through the use of lighter parts equal in strength to earlier parts and the simplification of structural members, savings in weight proportionate to the size of each machine have been made. The Model NSB-2 weighs approximately 465 pounds, and is 42 inches high, whereas the Model SB-2 which it replaced weighed approximately 585 pounds and had a height of 3 feet 10 inches. The capacity in each case remains unaltered. These changes have made possible lowered prices on these models.



The New Royer Sludge Disintegrator



The New Chicago Comminutor

Recent Improvements in Comminutors

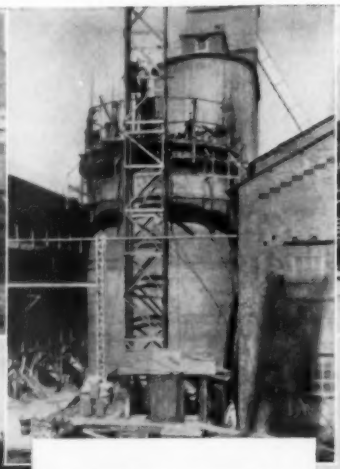
The new model comminutors made by Chicago Pump Co., 2336 Wolfram Street, Chicago, Ill., have staggered cutters and staggered combs, resulting in a smaller amount of material being engaged with the cutting members at one time, but giving a greater number of cuts for each revolution of the slotted cylinder. A new removable sharp-edged cutting member called the shear bar has been added. These shear bars are mounted on the slotted cylinder in staggered positions, to cut the stringy material before the abrasives can have time to wear the cylinder.

The new cutting or shearing angles between the cutting members have been designed to eject hard material, such as iron and stone, but to retain and cut soft material which has a higher coefficient of friction. The smaller clearances between cutting parts required increased resistance to distortion under load. Consequently, the size and weight of various parts were increased from 50 to 100 per cent. Comminutors with extended shafts now have universal flexible couplings instead of the former rigid shaft. The new shafts are more quiet and lighter, and transmit power more smoothly to the machine.

EVIDENCE PILES UP!

CALCIUM CHLORIDE IS NEEDED IN COLD WEATHER CONCRETING

Use 1 to 2 lbs. of Flake Calcium Chloride per sack of cement depending on temperature. Pays for itself many times over.



CHIEF SOURCES OF INFORMATION

Report of National Bureau of Standards
A. S. T. M. Specifications
State Highway Test Reports
Portland Cement Association Bulletin
Ohio State University Bulletin No. 61
Architect and Contractor Experiences
Highway Research Board Report
District of Columbia Bulletin No. 42
American Road Builders Association Proceedings
Reports from Concrete Products Industry

WHEN statements stand up under the scrutiny of keen scientists year after year, they become the "common laws" of business. No common law ever had more continuous acceptance, nor more complete verification than the one which says, "Use Calcium Chloride in Cold Weather Concrete."

Contractors know that the use of calcium chloride in winter concrete construction permits quicker finishing and use of floors and pavements. They know also that it permits earlier removal and re-use of forms.

These and many other advantages come from the accelerated rate of hardening, the high early strength, the greater workability and ease of placing.

The proofs are found not only in the economy and quality of work, but in the reports of many years' testing by competent testing laboratories.

Evidence piles up. Don't miss your most important aid in placing cold weather concrete. Put calcium chloride into every batch. Write for literature giving standard specifications and reports of foremost testing engineers, or refer to Sweet's Catalog File for A.S.T.M. Specifications and other data.

CALCIUM CHLORIDE ASSOCIATION, 4145 PENOBSCOT BUILDING, DETROIT, MICHIGAN

T. W. Moss, Director Truck Sales Dodge Division, Chrysler Corp.

Dodge Job-Rates Its 1940 Truck Line

For 1940 the Dodge Division, Chrysler Corporation, Detroit, Mich., is producing Job-Rated trucks in six different capacities ranging from ½-ton to the 3-ton Dodge diesel truck. This year also marks the introduction of the new Dodge-built 1½-ton Cab-Over-Engine models. These trucks are powered by six different engines, each engineered for the truck in which it is installed. There are 16 gear ratios available, and 96 standard chassis and body models are offered in 17 different wheelbase lengths.

Each model in the line is designed and built to handle its maximum capacity; in other words, to fit the hauling job it is intended to do.

According to T. W. Moss, director of Dodge truck sales, Job-Rated trucks now being built by Dodge fit 97.3 per cent of the nation's hauling jobs. In addition to the variations already mentioned, these trucks use four different clutches, three transmissions, eight different sizes of rear axles, twenty different frames, nine basic spring combinations, and six combinations of brake sizes. A wide range of extra equipment includes auxiliary springs, booster brakes, frame reinforcements, double reduction rear axles, engine oil filters, governors and tire combinations for every known need.

Small Diesel Engines for Industrial Service

A diesel engine which can be started instantly by hand on diesel fuel and ranging in power from 6 to 70 bhp is made by Lister-Blackstone, Inc., 1706 South 68th Street, Milwaukee, Wis. The patented fuel combustion chamber of Lister engines has a compression ratio change-over valve which is the secret of instant cold starting by hand.

Sufficient heat, as in all diesel engines, must be secured in starting to cause spontaneous combustion of the atomized fuel. This problem is solved in the Lister engine by cutting off the small auxiliary chamber, thus reducing the total size of the combustion chamber. The direct result is a very great increase of compression in the cylinder to a point where the heat thus generated is sufficient to positively effect combustion.

After the engine starts, a simple turn of the hand wheel removes the cut-off plug from the aperture and the auxiliary chamber again becomes an integral operating part of the combustion chamber, giving it increased size and at the same time reducing the pressure to that necessary for maximum efficiency and best fuel economy when running under load.

Lister-Blackstone diesels are used as marine auxiliaries, to operate electric units in commercial establishments, and as standby power units at water and sewage works as well as for continuous operation in many of the smaller municipal installations. Bulletin 130, which may be secured from the manufacturer direct, tells the whole story of Lister-Blackstone diesel engines.

Pensalt Market Research Headed by Davies

Richard L. Davies has been appointed manager of the new Market Research Department of the Pennsylvania Salt Manufacturing Co., 1000 Widener Building, Philadelphia, Pa. Mr. Davies is known to many in the chemical and allied industries through his sales development work on various Pennsylvania Salt chemicals, as well as through his chemical manufacturing and usage patents, and for his contributions to trade and technical publications.

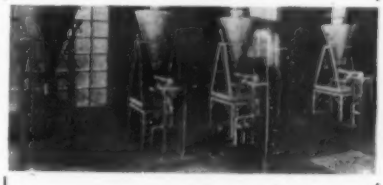
The new department is organized to make studies of the market for products now manufactured by Pennsylvania Salt, or products under contemplation; to launch the sale of new products in line with sales and management policies; and to suggest to the management what should be considered for future production and sales in both heavy chemical and specialty departments. Mr. Davies' headquarters will be at the executive offices of the company in Philadelphia.

Three A-C Officials Named Modern Pioneers

National Association of Manufacturers special awards to "Modern Pioneers" of American industry have recently been presented to Walter Geist, Vice-President, D. W. M. White, Manager and Chief Engineer, Hydraulic Department, and R. C. Newhouse, Chief Engineer, Crushing and Cement Division, of Allis-Chalmers Manufacturing Co., Milwaukee, Wis.

These awards are given to men whose pioneering on the frontiers of industry has resulted in significant contributions to the American standard of living through increasing employment, providing a new commodity or service, reducing the cost of a product already in use, or improving the quality of a product already in use. Mr. Geist's contribution was his invention of the Texrope Drive for power transmission, Dr. White's award is based on his invention of the Hydraucone draft tube for hydraulic turbines, and Mr. Newhouse's for his invention of a new high-speed crusher and Concavex grinding bodies for cement and ore-grinding mills.

SYNTRON
"GRAVIMETRIC"
FEEDER MACHINES
for Accurate
Dependable
Dry Chemical Dosage
by Weight



SYNTRON
"VOLUMETRIC"
FEEDER MACHINES
for Automatic
Dry Chemical Dosage
from Flow Meter or
pH Indicator Control
SYNTRON COMPANY
430 LEXINGTON AVE., HOMER CITY, PA.

RUSTA-RESTOR TRADE MARK REGISTERED
PATENTED
PATS. PEND.
(pronounced "rust arrestor")

STOPS RUST in STEEL WATER TANKS and FILTER BEDS

by the only known means of positive prevention

Write for circular describing this method

RUSTA RESTOR CORPORATION
1450 W. State St., Fremont, O.

"Phooey," says Riley, "Who Cares How It Looks?"

RILEY is a friend of mine, yes. We bowl a game together now and then, and of a Sunday night we're usually at his house or mine, dunking Lucy's sugar doughnuts into hot coffee and listening to the radio.

But one thing about Riley is he's stubborn like fly-paper. He gets an idea and sticks to it, come rip-saws or rainbows. Although, I got to admit that he knows a good thing when he sees it.

As, for example, Riley is a good customer at my Grease Palace. In fact, that is where we first got acquainted. He comes rollin' in one day in that big truck of his, which is crusted with mud from stem to stern, and battered up like an old tomato can after a back-alley shinny game.

I was just movin' under to give the forward universal a shot of grease, when . . . POW! A hunk of dried-up mud caught me square in the eye, and the first thing I knew I had forgot that Riley was a customer, and was only thinking of him as my friend.

"Where was you brought up?" I hollered. "In a barn yard? Why don't you take a little pride in this truck o' yours?"

I didn't really mean it, of course. I was just annoyed at this hunk of clay, and I was naturally takin' out my spite on Riley. But he was very superior.

"Phooey," he says. "Who cares how it looks? That there truck is made for workin', not just sittin' around lookin' purty."

"Ha!" I says. "That shows how much you know. You'd do a danged sight more payloadin' if people wasn't ashamed to see you pull up in this antique ox-cart of yours! You got to keep up appearances in this day and age, boy, and don't you forget it!"

"Meanin' I should ought to wear my blue serge every day in the week, I suppose," he comes back at me.

"Meanin' you ought to keep up with the times. Come here."

I took him to the door and pointed at Bert Glover's new Ford Truck which was parked at the curb. "There's what I'm talkin' about," I said.

And the first thing you know, we are goin' toward this truck, with Riley in the lead.

"There you are, there's a truck for you. Bright like a scoured penny, and streamlined like it ought to be."

I turned around to see what kind of reaction I was gettin'. Riley was gone. At least I thought he was, but then he pokes his head out from under a hind wheel.

"You're right," he says, scrambling out and clapping the dust off his hands. "That's just about as good-lookin' a rear axle as ever I see on any truck. Husky. New longitudinal front springs, too, I notice. And a cleaner underside."

"I know that," I says, "I've greased plenty of 'em, and what I mean, they're easy to get at. But it's a *handsome* job, Riley, is what I'm saying—"

"Right again," Riley interrupts, and this time he's lifted up the hood and is lookin' at the engine. "There's a set-up what's *really* beautiful. Look at them eight cylinders. Two banks, four each. Compact. Sweet."

"I been hearin' about these V-type jobs breakin' records in airplanes an' motor boats. They got the stuff."

I am exasperated. "Look at the *outside*," I say. "I'm saying it's a good-lookin' truck on the outside."

"I agree absolutely. Take that front axle. Hefty—really a good-lookin' axle."

By this time, I give up all hope. I am just starting back to the pit to finish up his grease job for him.

"Wait a minute," he says. "I think you've talked yourself out of a job. Just hold up that greasin' till you hear from me." And off he goes in the general direction of the Ford dealer's establishment.

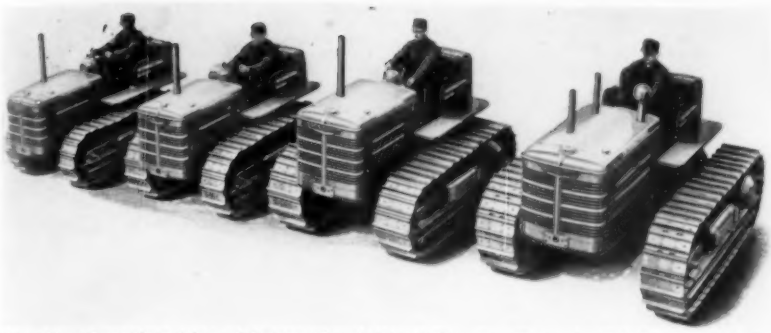
So that's how it is that Riley's driving a Ford these days. But what tickles me is how he takes care of that unit like it was a baby. If I get so much as a little smudge of grease on the fender, he starts braying like a mule, and won't budge till I wipe it off—with a *clean* rag.

Ford V·8 Trucks and Commercial Cars

Ford Motor Company, builders of Ford V-8 and Mercury Cars, Ford Trucks, Commercial Cars, Station Wagons and Transit Buses

Ford

Mention THE AMERICAN CITY—it helps.



The New Complete Line of International Diesel TracTracTors, the TD-6, TD-9, TD-14 and TD-18

New Diesel Tractors in International Line

Three new similarly styled and engineered diesel tractors, the TD-6 TracTracTor, smallest of the three models, the TD-9 and the TD-14, have been announced by International Harvester Co., Inc., 180 North Michigan Avenue, Chicago, Ill. These, with the larger TD-18 previously announced, give cities a choice of four sizes with drawbar horsepowers ranging from 30, for the TD-6, to more than 70, for the TD-18. A TracTracTor of the same size as the TD-6, to be known as the T-6, will be available very soon with a combination gasoline-distillate engine.

All the new TracTracTors are equipped with a full diesel engine provided with a distinctive method of starting on gasoline and shifting to full diesel operation after about one minute of operation. A conventional automotive-type electric starter is regular on the TD-18 and is available as special equipment for each of the other models.

Five forward and one reverse speed on the TD-6 and TD-9 and six forward and two reverse speeds on the TD-14 and TD-18 are provided by a selective type transmission, which in combination with a variable-speed type engine governor makes possible the close selection of correct speed and economical use of power on numerous types of loads from slow, heavy pulls or pushes to fast return hauls.

The engine of the TD-18 has six cylinders, and the engine of each of the three smaller models four cylinders, all being of the four-cycle full diesel type.

Union Metal Absorbs Sheet Piling Corp.

The Union Metal Mfg. Co., Canton, Ohio, has absorbed the Corrugated Steel Sheet Piling Corp., formerly of Chicago, Ill. Alexander Mayer, formerly President of Corrugated, joins the Union Metal organization as Manager of Sheet Piling Sales.

The manufacture of corrugated steel sheet piling, both standard and interlock types in 8-, 10- and 12-gage steel, will be continued. This piling has been on the market for a number of years and is used in the construction of sewers, cofferdams, bulkheads, bridges, disposal plants, dams and similar projects. Light-weight and maximum-strength are features of this piling, which has been used extensively in this country as well as in South America.

N. J. Sewage Works Association Meeting

The Silver Anniversary Convention of the New Jersey Sewage Works Association is to be held in Trenton, N. J., March 20 and 22, 1940. The Committee on Exhibits, headed by Charles H. Becker, has reported the following exhibitors in the Hotel Stacy-Trent:

American Brass Co.
American City Magazine
Ralph B. Carter Co.
Chicago Pump Co.
Dorr Company, Inc.
Flexible Sewer Rod Equipment Co.
Inertol Co., Inc.
Link-Belt Co.
Mine Safety Appliances Co.
Municipal Sanitation Magazine
Pacific Flush Tank Co.
Pittsburgh Equitable Meter Co.
Proportioneers Inc.
Arthur H. Thomas Co.
U. S. Pipe & Foundry Co.
Vapor Recovery Systems, Inc.
Wailes-Dove-Hermiston Corp.
Wallace & Tiernan Co., Inc.
R. D. Wood Co.

Rolph Given Award for Aids to Lighting

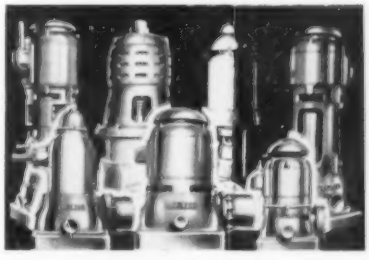
On the 150th anniversary of the American patent system, the Committee on Modern Pioneer Awards, Dr. Karl T. Compton, President of the Massachusetts Institute of Technology, honored Thomas Willett Rolph, Chief Engineer of the Holophane Co., Inc., 342 Madison Avenue, New York, by presenting him with an Award as a Modern Pioneer. This award was made for Mr. Rolph's contributions in the field of illuminating engineering, particularly for his improvements in traffic control lenses for clearer indications to motorists and pedestrians; improvements in airport boundary globes to reduce the hazards in landing aircraft at night; numerous inventions of refractors for effective street lighting to increase the efficiency and decrease the danger of modern automobile traffic; and other inventions totaling thirty-six.

OSGOOD

POWER SHOVELS
DRAGLINES
CRANES
TRUCK SHOVELS, Etc.
3/8 to 2 1/2 Cu. Yds.
HERCULES ROAD ROLLERS

Write for New Catalogs

THE OSGOOD CO.
MARION OHIO



Pumps, did you say?

Peerless presents the most complete line for 1940, for capacities from 5 to 100,000 gallons per minute. Hi-Lift Type for capacities to 5,000 gallons per hour; Turbine Type for larger quantities. Within the past 60 days Peerless Pumps have been installed in every State in the U. S. For miracle performance, choose a Peerless. Ask for Catalog.

PEERLESS PUMP DIVISION
Food Machinery Corporation

Factories at: Los Angeles, San Jose, Fresno, Calif., Massillon, Ohio

WATER OR OIL LUBRICATION
Peerless
TURBINE PUMPS

Good Roads Machinery Co. Exhibit at Road Show

The Good Roads Machinery Co., Kennett Square, Pa., manufacturers of a very complete line of road machinery, snowplows and ice-control equipment, had an unusually accessible exhibit at the Road Show of The American Road Builders' Association in the International Amphitheatre at Chicago last month. At one end of the exhibit was a Good Roads Road Plane, mounted beneath a Farmall tractor and with a scarifier and roller attachment available for mounting in place of the blade. A drag broom for double bituminous surface treatment, and sturdily built with steel broom, was also exhibited at one end of the long show space.

A Good Roads Handy Sandy sand, stone and gravel spreader box was shown, next to a miniature of a No. 6 Champion jaw crusher. A large V-plow with cable control and wing was shown mounted on a General Motors truck with a 6-cubic-yard hopper body and a paddle-type sand and chip spreader for ice control. Next came a miniature No. 1030 jaw crusher alongside a full-sized 2-F rotary sand spreader. A Roller Wheel for mounting on pneumatic tires so that the dual pneumatic on one side of a truck can be used for rolling a widening strip on bituminous paving was also shown. Then a Model T spreader with a safety seat for handling chip spreading in ice-control work was also shown. A full-sized No. 121 reversible snow-plow for trucks, measuring 11 feet wide and 30 inches high, and a No. 672 V-plow for heavy trucks was exhibited. At the opposite end of the exhibit from the Road Plane was a full-sized No. 701 tripping one-way plow mounted on a demonstrating stand, and alongside it a Model T paddle-type motor-driven sand and chip spreader.

New Pump Official at Allis-Chalmers

A. P. Binder has been appointed Assistant Manager of the Centrifugal Division of the Allis-Chalmers Manufacturing Co., Milwaukee, Wis. He is a graduate in electrical engineering from Purdue and entered the Allis-Chalmers graduate training course in 1911. The following year he entered the hydraulic engineering department, serving until 1917, when he joined the regular army, returning to Allis-Chalmers in 1919.

Added Protection for Panama Canal

The Panama Canal is to be further protected by the addition of two giant turbine pumps. These pumps are to be equipped with 36-inch bowls, and in continuous operation will be capable of producing a total of approximately 40,000,000 gallons of water per day. The compact design of these pumps will permit their removal from place to place for quick production of water when needed at any point in the Canal.

Designed and constructed by the Peerless Pump Co., of Los Angeles, Calif., these pumps will be ready for installation in the early part of 1940.

Keasbey & Mattison Officials Examining 1940 Sales Ammunition

Promotion Campaign of Keasbey & Mattison

At the annual sales meeting of Keasbey & Mattison Co., Ambler, Pa., an expanded advertising and sales promotion campaign was presented. Henry C. Whittlesey, Advertising Manager, pointed out that in 1940 K & M advertising in magazines and trade papers will reach more readers than any K & M program in the past. The advertising schedule for industrial products includes a total of 15 magazines that cover the important industrial factors in the purchase of K & M products.

The accompanying illustration shows A. B. Spaulding, Sales Manager, Century Pipe Division, of the Keasbey & Mattison Co., explaining some of the 1940 sales ammunition to a group of the company's officials gathered at the annual sales meeting.

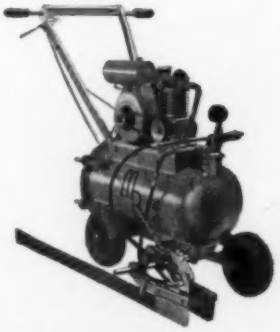
MARK STREETS the Safe M-B Way!

THIS SPRING—Focus attention on municipal streets and highways. Have they adequate, clearly defined traffic lines? Is re-striping necessary?

Well-marked streets promote safety and speed up traffic. But handmarking is slow, tedious, and inaccurate. So why not do it the MODERN way? Use handy M-B Traffic Line Markers for your striping job.

Dozens of Uses

Cities everywhere are using M-B Markers for all types of striping jobs: Traffic lines, (straight or curved), parking areas, safety zones, cross walks, athletic fields, airports, tennis courts. Can also be used for painting machinery, park benches and other municipal equipment.



Two Models

Both hand-propelled and power-driven models available. They lay down traffic lines from 3" to 6" wide, up to 15,000 feet per day. Sturdy, streamlined construction. Easy, one-man control. Practically no upkeep. Backed by 12 years' experience building street and road-marking equipment.

Have you a marking problem? Why not let one of our engineers study your problem and make constructive recommendations? No obligation. Write us today.

Meili-Blumberg Corp., Box A-3, New Holstein, Wis.

MB MEILI-BLUMBERG

A-2986-½

APRIL, 1940

The American City

APR 15 1940

PERIODICAL ROOM
GENERAL LIBRARY
UNIV. OF MICH.

E OF KANSAS CITY, MO.

the American Water Works
ion Is Holding Its Conven-
on—April 21-25, 1940

foreground, "The Scout," bronze
statue by Cyrus Dallin